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PART I.

Original Contributions.

A FEW MISCELLANEOUS CASES.

By GEORGE COWELL, F.R.C.S.

THE following case of neuro-retinitis appears to be worthy of record in the Ophthalmic Hospital Reports, on account of the regularly radiating striæ seen in relation with the yellow spot. Striæ are as common in syphilitic retinitis as spots are in the albumenuric form of the disease, but I never saw the regularity with which they are often arranged so beautifully marked as was witnessed in this patient. According to the microscopic examinations which have been made by various pathologists in similar cases, the connective tissue of the nervous layer of the retina appears to be the situation of the striæ. Their brilliancy would be in favour of their being retinal in this case.

No. I.—*Case of Syphilitic Neuro-retinitis in the Left Eye—regularly striated form of deposit around the yellow spot.*

Chas. W. Guest, æt. 29, a rather stout, florid man, was admitted as an out patient, Nov. 19, 1868. He gave the follow-

ing history :—The sight of the left eye, which has been gradually getting worse, began to be affected three weeks ago. He had syphilis four years ago, and twelve months since had a slight rash on the chest and under the arms, but no sore throat. He states also that he suffers from "spermatorrhœa." He has had some pain, of a slight aching character, in and around the left eye, with a general mistiness of vision. He now reads, with that eye, No. $3\frac{1}{2}$ Snellen, and with the accommodation at rest the acuteness of vision = $\frac{20}{20}$. In the right eye, S. = $\frac{20}{20}$. Both eyes are emmetropic. There has been no iritis.

Ophthalmoscopic Examination.—The media are quite transparent. The optic disc is swollen and covered with lymph, the retina around the disc is gray and opaque to the extent of $2\frac{1}{2}$ "', the margin of the disc and the choroid to this extent are obscured, the infiltration gradually shading off to the healthy retina and choroid. The retina is also somewhat swollen and opaque, and of a whitish gray colour by the sides of the larger vessels, the veins are large and tortuous, but there are no apoplexies, and the arteries are normal. The yellow spot is dark in colour, and radiating from it in every direction but that most distant from the optic disc are numerous *fine* white striæ, nearly one line in length, arranged with the most beautiful regularity, and close together. The striæ are exceedingly delicate and brilliant, not coalescing, but leaving a central space, about a line in diameter, which is occupied by the fovea centralis.

Treatment.—Four leeches were applied over the malar bone, and calomel and opium prescribed. The gums speedily became tender, and the pills were discontinued at the end of seven days, when iodide of potassium, in eight grain doses, was substituted, which again four days later was increased to ten grains, three times a day.

November 30th.—The note of the ophthalmoscopic appearance to-day is that the lymph is becoming absorbed, the retinal infiltration is subsiding, and the delicate white streaks around the macula lutea are disappearing.

Jan. 7, 1869.—The retina is somewhat opalescent round the yellow spot. All the striæ have disappeared, but there are seven or eight minute white dots taking their place. The lymph over the disc is all absorbed, but there are still some whitish

streaks by the sides of some of the vessels. The choroid round the optic disc, where it had been most hidden by the infiltrated retina, is much atrophied. The optic disc is white, but the vessels are of a fair size. There has been no appreciable improvement in the acuteness of vision, but the sense of mistiness has materially diminished.

The following case is an instance of the persistence of a portion of the central canal, which is formed during the development of the vitreous humour, and serves in the foetal state for the transmission of the capsular artery. The ophthalmoscope not unfrequently reveals some slight remains of it in relation with the optic disc, usually from half to three-quarters of a line in length, but it is comparatively rare to find any greater length. In one case, however, which has been recorded, the obliterated canal was visible in its whole length. Its position is usually the centre or the outer margin of the optic disc, whence it projects forward into the vitreous chamber, and is often sufficiently minute and tapering to be very easily overlooked.

No. II.—*Case of Persistence of a portion of the Fœtal Central Artery, in a Patient æt. 32.*

Sarah Ann Barnes, æt. 32, presented herself Aug. 1, 1867, with two or three posterior synechiæ, the result of an attack of iritis, which had occurred a few weeks before. On making an ophthalmoscopic examination of the left eye, there was seen projecting forwards, from a perfectly healthy optic disc, an opaque filament, of a greyish colour, tapering to a point, and apparently about $2\frac{1}{2}$ lines in length. It occupied the centre of the disc at the point of emergence and bifurcation of the central artery of the retina, of which it seemed to be a continuation. By viewing it in various positions of the eye, it was seen to stand out in relief.

The following case is a well-marked instance of what I believe to be of less uncommon occurrence than is generally supposed—cicatricial opacities of the vitreous

body. I have several times seen them after needle operations for opaque capsule, and have no doubt they would not unfrequently be found to be the cause of the non-acuteness of vision in those cases where a better result might have been anticipated. I believe they occur only where the vitreous is not in a healthy condition, or where the instruments used were not clean.

No. III.—*White Cicatrix in the Vitreous Body in a Child, æt. 13, after a Wound six months before.*

Sarah Smith, a healthy-looking child, æt. 13, was brought to the Hospital Oct. 26, 1863. Six months before she had, with some violence, accidentally inflicted a wound on her eye with a pair of scissors. The wound was situated about three-quarters of a line internal to the cornea, and a little below the equator of the eye, and its position is now marked by a small firmly healed cicatrix. The eye looks bright, but the anterior chamber is rather small, and the movements of the iris are not quite free, although the pupil appears to be quite round. She can only count fingers with that eye. In the other the vision is good.

After the instillation of atropine, two or three small posterior synechiæ were found to exist; the lens was quite transparent. A short distance behind the lens, passing obliquely from the situation of the cicatrix in the sclerotic, and terminating in the vitreous substance, was a white, tapering, apparently tubular cicatrix. The vitreous was otherwise transparent and healthy; the fundus of the eye also appeared to be perfectly healthy. Peripheral vision was improved by the partial dilatation of the pupil, but central vision was impossible, from the position and size of the cicatrix.

Remarks.—This cicatrix without doubt occupied the track of the wound made by the blade of the scissors. The wound must have been made with sufficient violence to contuse the structures through which it passed, and perhaps the scissors were not clean. One or both conditions would have produced some suppuration and the resulting cicatrix.

The following case is one of rupture of the two internal tunics of the eye at the point opposite to and

most distant from the place of incidence of the blow. It is particularly interesting from its extraordinary similitude to an ordinary posterior staphyloma, the conditions of which, indeed, it gradually assumed, so that at the last examination the appearance presented might have led to its diagnosis merely as such, had not the eye been under observation previously. The case well showed too the tendency to gape which exists in wounds of the choroid when transverse, that is, in a direction more or less parallel to the margin of the disc.

No. IV.—*Rupture of Choroid and Retina in the right Eye, produced by a blow from a tip-cat—Retinal vessels torn—Hæmorrhage—Subsequent atrophy of the Optic Nerve.*

George Rogers, a healthy boy, æt. 10, was brought by his mother to the hospital on September 24, 1868, on account of loss of vision in the right eye. The history was, that two months before he had had a violent blow on that eye from a tip-cat, that most dangerous of toys; that the lids had become swollen and discoloured from the ecchymosis produced, and that three days afterwards, when the swelling had subsided so that he could open the eye, it was discovered that he could not see with it. He cannot now count fingers with the eye in question, but has perception of light and bright objects. No traces of any injury are visible externally. The vision of the left eye is perfect.

On making an ophthalmoscopic examination, after well dilating the pupil with atropine, I found that the eye was a slightly hypermetropic one, all the media were quite transparent, and the tunics of the eye were generally healthy. Immediately below the disc, and extending outwards below the yellow spot, was a rent in the choroid and retina. These structures appeared to have been torn from the lower margin of the disc to the extent of nearly half its circumference, and had retracted from it a distance of upwards of a line. The wound narrowed off inwards, just as in the case of an ordinary posterior staphyloma, but outwards the rent extended about a line and a half at a tangent from the disc, the apex of the wound being sharp

and pointed, and with every appearance of the termination of a rent. The retinal vessels had been torn across, and appeared slightly curled at the lower margin of the wound. There were remains of a clot, occupying the area of the wound, allowing, however, the white sclerotic to be seen in places more or less distinctly. At the margin of the wound were several dots of pigment. The optic disc was white and tilted so as to appear oval in shape.

November 19th. The distal end or apex of the wound had undergone a change, it was seen to be rounded off. The optic disc was rather whiter.

March 25th, 1869. The optic disc has become very white and shrunken, or, perhaps, more correctly, the whiteness has assumed a slightly bluish tinge. The arteries and veins have become invisible in the disc itself, although visible in the retina. Some perception of light still remains to the eye.

Both eyes are slightly hypermetropic. The fundus of the left eye is perfectly healthy. The right eye was good before the accident.

The following case is also one of rupture of the choroid at a point distant from and opposite to the point of application of the blow. Here the choroid only was ruptured, and from the position of the wound the vision was less implicated. In this case, also, the gaping tendency of these lesions is well marked.

No. V.—*Rupture of Choroid produced by a blow with a stone—Rent situated a short distance internal and parallel to the optic disc—No primary lesion of the Retina—Useful vision.*

Geo. Provost, æt. 13, was brought to me May 18th, 1865, with the history of a blow on the right eye with a large stone three months before. For a fortnight the eye was "blind." Vision has since been returning, but the eye is "not so good as the other." He only reads with it No. 6 Jaeger. The ophthalmoscope showed a perpendicular rent in the choroid, only about a line and half in length, and a line and quarter internal to the optic disc. The wound was widest at the middle, measuring nearly three-quarters of a line, and tapered to a somewhat

rounded point at either end. The time which had elapsed since the injury would account for the slightly rounded apices of the rent. The spindle-shaped portion of sclerotic thus exposed was seen of a brilliant white, crossed by a few small retinal vessels, the margin of the choroid being marked by a few small patches of pigment. The optic nerve appeared to be healthy.

This will, perhaps, be a good opportunity for mentioning a case, of which I have very imperfect notes, but which was seen and diagnosed by Prof. A. v. Graef, at a visit to the Ophthalmic Hospital in 1864. The case was one of perforation of the retina. In Dr. Liebreich's Atlas of Ophthalmic Drawings there is one of a larger perforation than the present case, but it represents its condition as seen after the exposed choroid has become atrophied. I know of no drawing of a recent case.

No. VI.—*Recent perforation of the Retina—Subsequent atrophy of exposed Choroid.*

Jane Butler, æt. 21, apparently in good health, and with no evidence of syphilis, presented herself, October 31st, 1864, in consequence of great deterioration of vision in the right eye. I have, unfortunately, no record of its exact amount. The ophthalmoscope revealed a distinctly red, granular-looking, oval spot, $1'' \times \frac{3}{4}''$ in size, and situated between, but somewhat lower than, the optic disc and yellow spot. Prof. v. Graefe was kind enough to examine the case, and pronounced it a recent perforation of the retina. The choroid was then bright red and granulating, but after a time it gradually became atrophied. When the eye was examined twelve months afterwards the red granular appearance had disappeared, and a white oval portion of the sclerotic was seen to occupy its position.

The following case is an extreme instance of the results of wearing a glass eye, by a class of patients, with whom it is extremely improbable, and generally impossible, that they should be able to afford to purchase a new one, when the old one ought to be discarded as having become unfit for wear, and positively a source of irritation. From

want of proper care and cleanliness the eye seldom remains fit for wear for so long a time, as with a higher class of patients, and yet from a reluctance to appear without it, and the absence of the means of replacing it, they continue to wear it long after it has become a source of irritation. Patients who are wearing them often return to the hospital with chronic conjunctivitis, accompanied by more or less discharge, the disorder being often of a granular character. This at once disappears on discarding the source of irritation.

No. VII.—*Warty growths from the Conjunctiva from the Irritation produced by wearing the same Glass Eye for upwards of six years —Removal with good results.*

Emily Bacon, æt. 22, much marked with the small-pox, which probably explains the necessity for the extirpation, presented herself at the Ophthalmic Hospital, December 14th, 1865. She had been wearing a glass eye, which was given to her after the operation, for upwards of six years. Her palpebral and orbital conjunctiva is covered with *hard* warty growths, some of them coalescing, others distinct, with prominent, rounded, or where pressed together, flattened surfaces. Some of the larger masses are circular, others oval in shape, the largest being of the size of a bean. The orbit seems filled with them, but without in any way distending the lids. There is a little rather thin discharge. She has had some discharge for years, but cannot say when it first commenced; in spite of it, however, she has continued to wear the glass eye. The warty growths were first noticed six or seven weeks ago, but the artificial eye was still continued until there was no longer any room for it. The warts have grown rather rapidly during the last eight days. There has been no pain. The patient is unmarried, and works at a sewing machine. There is no history of syphilis, and none of cancerous disease in her family. Her health is good and the catamenia regular. The artificial eye has lost all its lustre, it presents very much the appearance of ground glass, though the roughness is less than one would expect from so prolonged an exposure to the action of the tears.

Treatment.—I freely removed the growths, leaving, however,

as much conjunctiva as possible, so as to diminish the subsequent contraction. It was obviously better to trust to subsequent applications to remove those smaller growths, near the margin of the lids, which were less warty in their character and free from hardness.

December 21st. Portions of the wound near the angles of the lids appeared highly granular. The wound and conjunctiva were well painted with liquor Plumbi Subacetatis, and the patient was ordered to repeat the application night and morning.

January 15th, 1866. The wound is shrinking well, there are two or three small tubercles of a warty character near the inner canthus. To continue the application.

February 23rd. The growths have entirely disappeared. The cicatrix is contracting. There is no discharge.

The four following are cases of vesicles occurring on the cornea, and are perhaps worth briefly recording here. In two there were vesicular affections elsewhere; in the others no skin affection existed. In one of the latter there was a vesicle symmetrically situated in both corneæ. Several writers have brought forward cases to show the relation between some superficial eye affections and certain skin diseases, and have succeeded sometimes in establishing their identity. It is not at all uncommon to get some conjunctival affection co-existing with syphilitic eruptions about the lids and face; and two of the following cases seem to establish a connection between a vesicle on the cornea and a similar lesion of the skin in some other part of the body. The conjunctival layer of the cornea is not so loosely attached to the cornea proper as the cuticle is to the true skin, and thus vesicles on the cornea are somewhat uncommon. In a chronic form they occur in certain morbid conditions of the eye, sometimes as the result of inflammatory action, but generally from impairment of nutrition. They sometimes occur in leucoma and some forms of keratitis, and in long standing and severe cases of conjunctivitis, the epithelium in a thickened state being raised from its basement membrane. In these

cases the cornea becomes more or less opaque and degenerated. Mackenzie mentions cases of chronic vesication which he terms dropsy of the cornea where it has occurred without any previous inflammation of the eye, and with the cornea perfectly clear. Of this, the 4th case is an instance. Mr. Bowman, in his lectures, delivered at Moorfields some years ago, relates a case where it had occurred as the result of slow disorganizing action, whereby the general nutrition of the organ was impaired. Mr. Bowman mentions that he had seen the same state in several other instances.

No. VIII.—*Vesicle on Right Cornea—several large Vesicles on the Hands and Right Wrist.*

J. M., a cachectic looking man, æt. 39, presented himself in June, 1862, complaining of smarting pain in the right eye, and some intolerance of light. A small transparent vesicle was seen nearly in the centre of the cornea. The drop of fluid contained within it gravitated to the most depending part, throwing thereby the corneal vesicle into minute wrinkles. There were several large vesicles on the hands and right wrist. The patient had been the subject of syphilis, but there was no rash to be seen, nor was there any ulceration of the throat. The vesicles were punctured, and a purge prescribed, and the patient got rapidly well. He did not present himself after the tenth day, so that it is not recorded if any permanent marks remained.

No. IX.—*Large Oval Turbid Vesicle of Cornea found during an Attack of Conjunctivitis of a slight character—no Skin Disease.*

Maria Stevenson, æt. 27, a cook, apparently much addicted to the free use of stimulants, came to the Hospital August 18, 1862, with a moderate attack of conjunctivitis. Her health appeared to be much disordered. She was relieved by the ordinary remedies.

On September 4th, however, she returned to the Hospital with an inflamed condition of one eye, much lachrymation, and a large vesicle on the cornea, which she stated she had first observed on the preceding day. The vesicle was very prominent,

but flaccid, and containing a drop of turbid fluid, which, as in the preceding case, gravitated to the bottom of the cavity. It was oval in shape, and occupied a position from a little above the centre of the cornea to within a quarter of a line of its lower margin. It was very painful. The patient had been the subject of no skin disease, and had received no injury. The vesicle was punctured and various modes of treatment were adopted without benefit. At last arsenic was prescribed, but the patient soon after ceased to attend, and the result of the case is unknown.

No. X.—*Oval Vesicle on Left Cornea—Bullæ on Arm and Neck—slight Fever—speedy Recovery.*

D. Nevell, æt. 40, came to me at the St. George's and St. James's Dispensary, on March 11, 1863, with several bullæ on the arm, and one large one on the neck, accompanied with a slight febrile attack; there was considerable heat of skin. He also complained of "a feeling of weakness" in the left eye, but no pain, and on examination I discovered a small, oval, transparent vesicle on the cornea, to the outer side of the situation of the pupil. It contained some almost clear fluid, which as usual gravitated to the lower part. The case speedily yielded to saline treatment followed by tonics. The corneal vesicle was punctured.

No. XI.—*Symmetrical Transparent Vesicle in each Cornea in a Patient 60 years of age.*

Louisa Clark, æt. 60, came to the Hospital May 16, 1867. A small round vesicle, about three-quarters of a line in diameter, rather less in the left, was seen on the cornea of both eyes. They were situated downwards and inwards in both, at a point midway between the centre and margin of the cornea. They produced slight "malaise" and lachrymation. The eyes were good, with presbyopia of $\frac{1}{10}$. The vesicles were punctured and she was ordered to wear a bandage over the eyes for a few hours after she reached home.

May 23.—The vesicles had partially refilled. They were again punctured. A fortnight later they were quite cured. Glasses of + 11 were ordered.

I alluded above to the fact of the occurrence of conjunctival affections, with syphilitic eruptions about the lids and face. The following is a well-marked case:—

No. XII.—*Circular Patches of Conjunctival Inflammation co-existing with Syphilitic Eczema of Face—repeated Recurrence.*

Albertina Barker, æt. 34, came to the Hospital, June 2nd, 1862, with both sides of the face and forehead covered with chronic eczema of a syphilitic character. On this occasion the skin affection was accompanied by a pustular form of ophthalmia. Iodide of potassium was administered for six weeks, when she was discharged, the eyes quite well, the face much improved.

The patient reappeared Feb. 2, 1863, with a similar attack, was treated in the same way, and was discharged April 20th. Face also as nearly as possible well.

October 29.—Came with a small ulcer of one cornea for which quinine and iron was taken for two weeks, when she was again discharged cured.

July 21, 1864.—Returned with chronic eczema of both cheeks, nose, both eyelids, and lower central part of forehead. The right eye presented an appearance different to the previous attacks. There were two circular patches, one on the cornea, and the other on the conjunctiva, just internal to the cornea, both of which presented some of the characteristics of the eruption on the face. Of course there was a good deal of conjunctival injection in the affected eye. The malady again yielded in about six weeks to iodide of potassium.

July 2, 1866.—Has had one recurrence since last attendance, but was too far away to come to the Hospital. She comes to-day with an exactly similar attack. It was again relieved by the same treatment.

THIRD SERIES OF CASES OF HERPES FRONTALIS.

By JONATHAN HUTCHINSON.

ALTHOUGH a very considerable number of cases of herpes frontalis have now been recorded, yet the subject seems to me of sufficient interest to warrant the publication of others. I now add those which have come under my notice since the last number of our Journal was issued. None of them illustrate any new points, and all support my former inference that the nutrition of the eyeball is endangered only when the disease affects the oculo-nasal twig, a circumstance which is made apparent by the appearance of the eruption on the tip of the nose.

Several of my recent cases have shown, in an interesting manner, how very local the disease may be. Thus, instead of the eruption coming out over the whole forehead it may affect only a narrow vertical band passing upwards from the root of the nose, or, in another case, the temporal region just above the outer corner of the eyebrow may be deeply scarred, whilst scarcely any scars are seen elsewhere. These facts favour the belief that the eruption is sometimes due to irritation, beginning in small nerve branches, after their subdivision, rather than in the chief trunks or in the centres. See page 185 for facts in the opposite direction.

All of them confirm my previous impression, that, excepting in aged persons, after-pains are not common.

CASE XXXIV.—*Herpes Frontalis (slight) on right side—No inflammation of the Eye.*

J. Bayly, æt. 49, a healthy man, a printer, applied at the Hospital on May 31 with the scars of a very slight attack of herpes on the right forehead and upper eyelid. It had first appeared five days before, and had been very mild. There was

a little irritation before it came out, but not much. The distribution of the eruption was very definite. The principal line of vesicles ran straight up from root of nose on right side of median line. None on temporal region of forehead, and none on side of nose. A group on upper lid. At present the eye is simply watery and irritable.

CASE XXXV.—*Herpes Frontalis, with an abortive patch near the tip of the Nose—Iritis and ulcer in Cornea.*

Ann Ward, æt. 28, was sent to me by Dr. Forshall with the statement, "Inflammation of skin and cornea ; iritis ; no history."

She had a few scattered scars of herpes on the right forehead, extending into the scalp. Near the tip of the nose was a red patch, where, she said, some spots had threatened, but had never been fully developed. All traces of iritis had now disappeared. There was a single pustule near the upper margin of the cornea. This pustule was probably recent, and not herpetic. She told me that the eruption had come out suddenly three weeks ago, with a great deal of pain. The eye had inflamed afterwards.

CASE XXXVI.—*Herpes Zoster Frontalis in the right side—Irregular distribution—No inflammation of Eye.*

Dec. 8, 1868. Anne Bayes, æt. 26, attended at the Skin Hospital with diffuse eczema of the scalp, and with also the deep scars of herpes frontalis on the right forehead. The scars were unusually deep and large, but, fortunately, they were only few in number. The chief group was in a line with the eyebrow. Just beyond the outer angle of this there was an irregular patch almost as large as a shilling. Directly above this, to the outer side of the frontal eminence, there is another group of small ones. From the inner angle of the eyebrow upwards to the parting of the hair there was a line of small but deep scars. The frontal eminence itself, and adjacent parts, were quite free. There were no scars on the nose, and the eye was quite healthy. She complained a little of the itching feeling about the principal scar, but, excepting that, there was no pain.

Her account was that she had been attending at St. Bartholomew's, under Dr. Andrews' care, for eczema of the scalp, and had been under care for a month before the herpes came out.

During the attack of herpes she described an attack of very severe pain, such as to prevent her sleep, and oblige her to give up her place, and return home. The present eruption was merely common eczema of the scalp. She never had shingles before.

CASE XXXVII.—*Severe Herpes Frontalis of left Forehead—No vesicles on Nose, and no inflammation of Eye.*

A gentleman, æt. 24, was brought to me in July, 1869, with his left forehead covered with the scars of herpes. He was just recovered from a very severe attack. He had been attended by two medical men, one of whom had given the correct diagnosis, and the other had considered the disease erysipelas. The nose had not been affected, and the eye had wholly escaped. He still, at the end of six weeks, suffered much from neuralgia of the skin. He had but just left his room, having been very fearful of a relapse of "the erysipelas." We sent him to the sea-side, and assured him that he would never have any return of his malady.

CASE XXXVIII.—*Severe Herpes Frontalis, followed by partial Ptoſis.*

On May 4th, a little girl was brought to me from Mr. Garman, of Bow, by whom she had been attended for severe herpes frontalis of the right forehead. The eruption had left numerous and deep scars, and some of the sores on the top of the head were still unhealed. There were a few small scars on the side of the nose, near the inner canthus. The child's mother told me that there had been no spots on the side of the nose lower down. The cornea was quite clear, and the iris active. The conjunctiva was still somewhat congested. The upper lid drooped, so as to almost cover the eye.

CASE XXXIX.—*Herpes Frontalis (severe)—Oculo-nasal not affected, and no inflammation of the Eye—Xanthelasma of Eyelids.*

Thomas Higgins, æt. 58, applied as an out-patient, under the care of Dr. M. Mackenzie, on account of pain and numbness in the right forehead.

I saw him on September 29.

On examining the forehead, a number of deep scars were seen over the whole of the right side of it, from the eyebrow to the hairy scalp, extending outwards as far as the line of the outer canthus and inwards to the middle line.

There was one scar in the middle of the upper eyelid, and an indistinct line, about half an inch in length, along the right of the middle line of the nose.

There were none close to the inner canthus.

The scars extended amongst the hair as far as the vertex.

Last Saturday three weeks the eruption came out. It had been preceded by some pain, but not to any marked extent.

The eye was closed for awhile, and he could not see, but if the lids were opened he then saw well.

He had perfect vision.

The scarred forehead was decidedly anæsthetic. He scarcely felt at all, though he felt well close up to its margin all round.

He had intense shooting pain, keeping him awake.

He was the subject also of a slight form of xanthelasma, to which the following note refers:—

On each lower eyelid there were small whitish-yellow spots a little elevated, looking like distended sebaceous follicles. On each inner canthus there was a whitish patch the size of the tip of the little finger.

The affection was more marked on the left than on the right side.

When young he was very subject to sick headaches, but had not been so of late years.

He was jaundiced some twenty years ago.

He is of pale complexion, but has good health. Seven years ago he was laid up with "ague and low fever."

I was indebted to Dr. Woodman for an opportunity of seeing this patient, and to Mr. Waren Tay for the above notes.

CASE XL.—*Scars of Herpes Zoster of the left Forehead, six years ago.*

January 4th, 1869.—A young woman, who was attending as an out-patient under the care of Mr. Little at the London Hospital, attracted my attention by some conspicuous scars on the

left forehead. They were quite limited by the middle line, a series of them running along just to the left of this. There was another line along the margin of the hairy scalp, a group at the outer extremity of the eyebrow, and another at the inner. There were none below the level of the inner canthus. The eye was quite healthy.

Her account was that six years before she had been in very great pain in the forehead one night, and in the morning she saw an eruption out. It was called erysipelas. The spots disappeared in a few days, leaving these scars.

CASE XLI.—*Herpes Frontalis in a young Child—Ulcers on the Cornea previously existing.*

For the opportunity of seeing the subject of this case, I was indebted to the kindness of my colleague Mr. Hulke.

Rose Elliot, æt. 4, was brought to me by her father, at Moorfields, on October 4, 1869, with herpes frontalis on the left side of her forehead, and ulcers on the left cornea.

The eruption had come out about a week before her admission, and had been preceded for a few days by pain in the left side of the face.

She had been under care at Moorfields eight months before for "inflammation" of both eyes. The right eye recovered, but she left off attending before the left was well, and it had several times got better and then relapsed since she ceased attendance. It had been better before the eruption of herpes appeared, but became worse when the spots appeared on the forehead. The eyes became affected in the first instance after measles.

When first seen by Mr. Hutchinson, the herpes eruption had begun to fade; the vesicles were small, and none of them confluent. They occurred in three positions—

A vertical double line of vesicles extended from the root of the nose to the scalp on the left side; it went up to, but did not transgress, the median line.

Another small patch was seen about an inch and a half further outwards, over the outer angle of the orbit and near the scalp.

The third group, consisting of two or three small vesicles

occupied the outer part of the upper eyelid. Both eyelids of the left eye were oedematous and inflamed. There was considerable photophobia. The left cornea showed a general diffused opacity, and there were several small ulcers of recent date on its surface.

There were no spots on the nose or cheek, nor any to the right of the median line.

I am chiefly interested in recording this case because it illustrates a possible fallacy in the interpretation of the connexion between herpes frontalis and inflammation of the eye. In all probability the ophthalmia present was the remains of previous disease, aggravated, but certainly not originated, by the herpes. Without attention to the history the case might easily have seemed exceptional to the rule that if the nose escapes the eye does so also.

NOTES OF CASES.

By ROBERT P. OGLESBY,

*Assistant Demonstrator of Anatomy in Leeds School of Medicine.*CASE I.—*Removal of the whole of the Iris in an Operation for Cataract.*

Peter S., æt. 78, suffered from double cataract. The eyes in other respects were quite healthy. The corneæ were bright, the irides healthy, and the pupils acted well. Tension was natural. The cataract had existed in the left eye for three years; in the right, for two years and a half.

The man was in good health. The left eye was selected for operation. The incision was made with a broad iridectomy spud. On seizing the iris, to perform iridectomy, I was astonished to perceive that at no part of its circumference was it attached, and that I was drawing the whole of it carefully across the anterior chamber towards the wound. I endeavoured to extract it entire, but in this I failed, as it separated at the point where the forceps had seized it. After removing the remaining portion, I extracted the lens in its capsule with the scoop. A slight quantity of vitreous escaped. The removal of the iris was not followed by any bleeding, leading me to believe that it was, at the time of the operation, free from any attachment whatever. Very little disturbance followed the operation, but I was disappointed to find, at the end of a week, only a slight amount of vision. Improvement has been very slow, and I doubt whether he will ever obtain useful vision.

CASE II.—*Sudden Blindness—Rent in Choroid.*

G. J., a painter by trade, applied for relief on account of sudden failure of sight. One morning, four or five weeks before, while proceeding to his work, being then in the enjoyment of perfect vision, he suddenly exclaimed to his companion, "How foggy the morning has become," but his friend assured him that

the sky was clear, and the sun shining most brilliantly. He has never seen well since.

The right disc was much congested, and the arteries were very small. Immediately above the disc was a breach in the choroid. It was half-moon shaped, and of considerable extent. The left disc was very woolly, but the retina appeared healthy, and the vessels were normal in character. The vitreous was slightly turbid. He could read No. 20 Jaeger with either eye. The man failed to attend again.

CASE III.—*Congenital Malformation of the Optic Discs—No Vision.*

Ann C., æt. 9 months, had been blind since birth. She was a healthy-looking child, and the parents could not account for her defect of sight by giving the history of any fall, blow, or illness. There was no syphilitic history.

In the left eye the disc appeared as the smallest speck, from which the vessels emerged. It was natural in colour, but not in shape, being, as it were, compressed, and divided by a sharp bridge. The veins were relatively larger in size than the arteries. The retina and choroid appeared to be healthy.

In the right eye the disc was represented by a leaden-coloured opacity of curious shape. After careful searching, only one small vessel could be traced emerging from it.

CASE IV.—*Sudden Blindness—Floating Body in Vitreous—Centripetal Contraction of the Field of Vision.*

A young man, æt. 17, a mechanic by trade, enjoyed perfect vision till the twenty-fifth day of April, 1869. On that day he accompanied a regiment of soldiers from their barracks to church, a distance of one mile. The day was very fine, and the sun shone brightly, and as he gazed on the scarlet coats of the soldiers, he "felt his eyes sorely dazzled." As he continued looking at the soldiers the left eye suddenly "went blind." He at once ran home in great alarm to acquaint his parents about the matter. His mother, on examining the eye, was at once struck by the difference in size of the pupils, the pupil of the blind eye being very large.

On examining him three days afterwards I found that he was then, as he always had done, enjoying excellent health. His manner of living was extremely temperate, and he neither indulged in the use of spirituous liquors or tobacco. He had never suffered from syphilis. The loss of vision had not been preceded by any usual symptom, further than the extreme distress he experienced while looking at the soldiers. The pupil of the diseased eye was very large, while its fellow was slightly contracted. The irides were free from disease. There was no increased vascularity of conjunctiva, neither was there intolerance of light. Tension of both eyes normal. The pupil of diseased eye remained motionless when exposed to bright light, and would not act in concert with its fellow, but the pupil of the right eye acted readily.

Vision: left eye, shadows only; right, normal. The ophthalmoscope showed extreme congestion of the left disc, with large and tortuous veins. The retina and choroid appeared healthy. As the eye moved outwards, a large floating body crossed the field, in colour like a piece of fine crape.

Field of Vision.—There was great centripetal contraction of the field of vision in the left eye, its measurement being one inch and three-quarters by one inch and a half. He was ordered iodide of potassium in ten grain doses thrice daily.

Four days later he again visited me. I then found that the pupil was less dilated and would act slightly. Vision had materially improved, and qualitative as well as quantitative perception of light was moderately good. The film was decidedly less dark in colour, its apex being nearly transparent. There was no alteration in the appearance of the disc or the vessels. The field of vision had increased in size, measuring 5 inches by $4\frac{1}{2}$ inches. He was told to continue the iodide of potassium.

One week later vision had so far improved that he could read 4 Jaeger, and the film was barely perceptible.

On May 17 the condition of the left eye was as follows:—The pupil was normal. Vision, 1 Jaeger. Field of vision, normal. Film, not perceptible. Slight congestion of disc. Less tortuosity of veins.

The iodide of potassium was discontinued at the end of two weeks, when he reported himself well.

NOTES OF MISCELLANEOUS CASES.

By JONATHAN HUTCHINSON, F.R.C.S.

(Continued from page 228.)

No. XLVI.—*Retinitis Pigmentosa supposed to be Congenital—Marriage of Consanguinity—Nyctalopia an ill-marked Symptom—Ophthalmoscopic Appearances.*

Samuel Bulley, now æt. 14, is believed to have been born with defective sight. At any rate, it was noticed at the age of 4 that he often ran against things, and did not seem to see well. It is not thought that he has got materially worse, but of this we have no accurate measure. He has often been deaf at times, but has now recovered fairly. He has been sent to school, but has scarcely learnt to read. From the earliest childhood it has been noticed that as soon as daylight ended he became almost blind, and he has been in the habit of going to bed as soon as artificial lights became necessary. He can, however, see by gas or candle-light if the light be good; it is only when the light is defective that he cannot see. By bright moonlight he sees almost as well as in the day time.

Vision in each eye $\frac{20}{100}$, and No. 4 Jaeger at 12". He is hypermetropic a 14th, and with + 14 he sees $\frac{20}{70}$ even by candle-light.

The ophthalmoscopic appearances are almost precisely similar in the two eyes. In each the disc is pale grey (waxy), its margins indistinct, surface hazy, and vessels very small. Both *arteria* and *vena centralis* are greatly reduced in size, the artery so small in the right that it can with difficulty be traced. He is of rather fair complexion, and the choroid is thin. Its epithelial layer appears to be indistinctly marked with small whitish pits. The outlying portions of the retina are speckled over with pigment, arranged in beautifully delicate webs, like bone corpuscles, with uniting lines between them. Many specks of pigment are in front of retinal vessels. The pigment begins at a distance from the optic disc of about equal to three times its width, and then increases in quantity as we pass outwards. I cannot bring into

view any peripheral part of retina in which the pigment is not present.

His father and mother were first cousins, their fathers having been brothers. It is not known that defects of sight have been observed in the family before. They are from Plymouth. His father is very fair, his mother very dark. He takes after his father. There are five living in the family; all the others are healthy. He was himself quite healthy in infancy. His father had been for long ill before the boy's birth, in consequence of a fever; he remained nervous and not himself.

No. XLVII.—*Sudden failure of sight in one Eye in Conjunction with Paralysis of Third Nerve—Partial recovery of Third Nerve, and Slight Improvement in Sight—No cause assignable.*

Miss A., æt. 24, of good constitution, suddenly one afternoon in February last found her left eye fail, and had a pain in the forehead. The pain crossed the forehead and was chiefly produced in moving the head.

The pain lasted for three weeks. The globe ached and the lid drooped. She appears to have had for a time almost complete paralysis of the third nerve. On the day before it begun she had been standing out of doors on a very cold day, but was not aware that she had taken any hurt.

Some three years ago she had a curious spasmodic affection of one leg, which lasted for a few months. The whole limb used to jump and twitch, and was somewhat weak. It is not weak now.

Within twenty-four hours from the beginning of the affection of the eye she was in "pitch darkness." At first it was only a little dim. Can now see 100 at 1'.

July 2, 1868. The eye is turned outwards; the pupil moderately dilated and fixed. She is unable to look upwards or downwards perfectly. Is improving both in sight and in movement of eye. The optic disc is white in all parts, and equally so in all. It is perfectly clear, and the choroidal margin distinct and perfectly round. It is in a state of almost absolute anæmia rather than atrophy. Both vena and arteria centralis are reduced in size, but the artery is proportionately much smaller than the vein. The artery can indeed only just be traced;

still it is traced definitely. There is no opacity of retina at any part. The fundus, excepting the disc, seems healthy.

It is quite certain that the failure was sudden, because when she first noticed it the eye was only dim.

What was the cause of the sudden failure of sight in this case? Not *embolism*, for the third nerve as well as the optic was affected, and the arteria centralis is still visible, whilst the disc itself is white. *Neuritis* is probable; but we must suppose the inflammation not to have descended so low as the eye itself, for there are no traces in the disc. We must suppose also that the third nerve was involved. It is very rare, however, for neuritis to involve but one side, and for it to implicate other nerves than the optic; also it is usual to have more severe general symptoms than were here present during the early stage.

The account of a former attack of partial paralysis of one lower extremity is very interesting.

No. XLVIII.—*Congenital Syphilis with destruction of Soft Palate—
Absence of Malformation of Teeth.*

Joseph Jones, æt. 27 (April, 1868). He was treated by Mr. Dixon for interstitial keratitis (double) six years ago. He has so far recovered that he can read ^{brilliant} but there are dim central opacities in both corneæ.

Two years before his keratitis he had sore throat, and the uvula and part of soft palate have been destroyed. There is a large scar in the pharynx. His teeth are not materially malformed, nor his nose flattened. There are very marked radiating scars at the angles of his mouth. He has fairly good colour.

His case supports the opinion that the patients who are liable to ulceration of the throat as a consequence of inherited taint, are not those who show the characteristic teeth and physiognomy. It is also probable that the keratitis had not been precisely of the common kind, for it had left central opacities more like those from ulcers.

No. XLIX.—*Xanthelasma Palpebrarum*—*Severe, Hepatic Dyspepsia*—*Repeated attacks of temporary Blindness*—*Ultimate persistent Blindness of one Eye.*

The term xanthelasma has been applied by Mr. Erasmus Wilson to the yellow patches not unfrequently seen in the eyelids of middle aged or elderly people, and described by Addison under the name Vititigoid plana. I prefer Mr. Wilson's name, because it refers to one of the most prominent features (yellow colour) and involves no theory of relationship to any other disease still less understood. The affection in question not unfrequently comes under the notice of ophthalmic surgeons, but it is regarded as merely a disfigurement and not suited for treatment, nor involving any serious consequences.

I record the following case here, not on account of the skin disease, but because a very curious form of amaurosis attended it.

William Savage, æt. 45, of dark complexion. On the eyelids of left eye are three patches, one at outer canthus, one above inner one, and a third below it. On the right lids there is a very small one at outer canthus, corresponding exactly with that on the opposite side, but there are no representatives of those on the upper and lower lids. The three patches on left side are all of some size, oval, $\frac{1}{3}$ of an inch long, or more; that on right is a mere speck. They present the usual characters.

He states that he has suffered much from his liver and indigestion. He has been very liable to sick headaches. Eight years ago he was under Dr. Gull's care for indigestion and thought he was in a consumption. Was so weak that he could not work, pain in head, &c. He has long been accustomed to take medicine for his stomach. He takes aperient medicine to prevent sick headaches, but his bowels are not usually costive. His headaches make him giddy. He has never had jaundice. Has had rheumatic fever three times.

The first attack occurred about eight years ago. He believes that the eyes were equally good up to date of last attack, for which he now attends.

Pupils sluggish; right the more so; of equal size.

After the last attack he had headache, "great pressure on the head." His headaches vary much in position, sometimes it is all on one side, sometimes only a small patch is affected.

L reads ^{brilliant} easily.

April 19, 1869.

History of Eye Symptoms.—Last Saturday fortnight he was in good health. At his work he found a cloud coming rapidly over the right eye, and in a minute or two was quite blind in it. He had often had similar attacks, but they had never lasted more than a minute or two. Two or three times both eyes have failed, and he has been for a minute or two in total darkness. After these attacks he has usually had a sick headache follow. In a general way only one eye has suffered at a time, sometimes one, sometimes the other, the right the oftener.

No. L.—*Coloboma of the Iris upwards and outwards.*

A little girl, æt. 7 (Annie Cordeaux), is the subject of an unusual malformation of the right eye. There is a coloboma of the iris upwards and outwards, and opacity of the lens. The coloboma has a width of about a quarter of an inch, and includes the ciliary as well as the pupillary part. In the sclerotic, a little above it, is a blot of dark brown pigment, at first sight suggestive of an iridectomy, but probably resulting from a congenital imperfection of sclerotic.

No. LI.—*Myopia of one Eye only, ending early in Blindness.*

A young woman, æt. 21, came on account of absolute blindness of her left eye. It had been weak for long, but the final loss of sight was only of six weeks' duration. Her right eye enjoyed perfect sight. Her left globe was much elongated, and on examination we found advanced myopic changes in the fundus, a large staphyloma, &c. It is of interest as an example of myopia advancing to its last stage in one eye, whilst the other eyeball remained of normal length.

No. LII.—*Inherited Syphilis falling with greater severity on a younger child.*

Inherited syphilis usually falls with greatest severity on the child born nearest to the date of disease in the

parent. An interesting exception to this rule is presented in the following case:—

A man brought both his children, girls, on account of interstitial keratitis. The younger, æt. 9, presented a very characteristic physiognomy, and teeth. In her the keratitis was just commencing. She had a prominent forehead from hydrocephalic tendency in infancy. Her elder sister, three years older, showed very slight peculiarities of physiognomy, and her teeth were perfect. She also had keratitis just commencing.

No. LIII.—*Congenital difference in colour of the Irides—Soft Cataract in one whilst the other remained quite free.*

George Derrick, æt. 36, in good health, applied at the Ophthalmic Hospital, in August, 1869. He had discovered quite recently that he could not see well with the left eye. It had been noticed also that there was a cataract in the eye.

The whole lens was slightly opaque, and had probably been so for some months. The iris acted well. To myself the chief point of interest was in the very dissimilar colour of his two irides. That of his right eye was grey, with much yellow and brown pigment, and that of the left a blue grey, without a trace of brown. He told me that his sisters had often mentioned to him that his eyes were odd ones. He had not himself ever observed any difference in their sight. He was quite aware that they differed in colour. Thus, the case confirms an opinion which I have formerly expressed, that when the colours of the two irides are markedly different, not unusually ulterior changes follow, or marked differences in accommodation are present.

In this instance I was quite unable to inspect the fundus of the eye, as the lens was too opaque. The cataract is of blue-white tint.

No. LIV.—*Congenital (?) Paralysis of the Third Nerve.*

Mr. Eaton, of Ancaster, Lincolnshire, sent to me a young woman who suffered from congenital (or infantile) paralysis of one third nerve. Her right eyelid drooped so as almost to cover the cornea, and she had no power of elevating it. The eye looked outwards, and she could scarcely bring it into a straight position. She could not turn it inwards in the least, nor could

she elevate or depress it. Slight rotation (superior oblique) occurred when she tried to look downwards. The external rectus acted vigorously. The pupil was of medium size, and acted a little, but only very sluggishly. Thus, it seemed probable that the radiating, as well as the circular, fibres of the iris were involved in the paresis. She could read No. 4 at 1' and $\frac{2}{7}$ in distance. Both eyeballs were hypermetropic in low degree. The fundus of the divergent eye was normal in every respect. The patient, whose age was 21, stated that she had been in her present condition as long as she could remember, and that her mother said that she had been born so. I declined to undertake any operation. It might have been practicable to relieve the ptosis, but this would only have exposed the divergent globe more, and not improved her appearance.

Making allowance for a degree of hypermetropia, which it was not easy to measure accurately, there is no doubt that the divergent eye possesses almost full accommodation.

No. LV. — *Liability to very severe Headaches—Failure of one Eye after parturition, and on a second occasion failure of the other also—Ultimate Blindness—History of a temporary Blindness in both Eyes after parturition twenty years ago.*

Mrs. C. Nickerson, æt. 42, from Eastbourne, applied to me when blind of both eyes from atrophy. I found both discs abruptly margined, quite clear, and free from lymph, and of a grey white. They were depressed by atrophy. The vessels were almost of normal size, the arteries somewhat diminished, but the veins not increased.

Mrs. N. was a pale, unhealthy looking woman, the mother of nine children. She stated that, in a general way, she had enjoyed good health. After her first confinement she had "overflow of blood to the head, and was totally blind for a day." She was bled and leeched, and in a few days she regained her sight, which, after a while, became perfect again. On this occasion she was for a time insensible. This was twenty-two years ago. From that time until four years ago she had no defect of sight. She has experienced two severe nervous shocks, and had much trouble.

Her present ailment began four years ago. She had a cross-

birth and a very bad confinement, during her recovery from which she found her left eye very defective. She was exceedingly weak at the time, so that she could scarcely walk. Her surgeon advised her to wean the baby, and this she did when it was four months old. In about two years from the first failure her left eye was blind. She was confined again two years ago, and after this confinement her right eye failed rapidly. It had begun to fail before, but had not advanced far. Her right failed, as the left had done, very slowly. For the last two months she has been in her present condition, unable to count fingers, and barely seeing the largest objects. Mrs. N. gives the history of liability to most violent headaches. She had never been liable to them before her first confinement; but after the illness above mentioned (insensibility and blindness) they came on, and she has never since been wholly free from them. She describes these headaches as having been of terrible severity. They usually lasted about twelve hours, and were attended by sickness. During the time that the left eye was failing, the headache was over the left eyebrow. Latterly, whilst the right has been failing, she has had no pain whatever in the left, but only on the right side. The headaches have usually recurred once a week, but the hemicrania, during the progress of the amaurosis, was more persistent.

For twelve years Mrs. N. has been liable to attacks of psoriasis, and has several times had the eruption out very freely indeed. It came out worst in the early months of each pregnancy, and again during lactation.

She has never had any positive paralysis, but has suffered much from aching in her limbs, especially in the left thigh. She thinks her left lower extremity is weaker than the other, and also, though in less degree, her left arm. Hearing, taste, and smell perfect. Memory excellent. Her headaches lately have been very bad indeed, so that "she has thought she must go out of her mind."

Her pupils are large, but not motionless.

No. LVI.—*Syphilitic Choroiditis, Symmetrical; and causing complete Blindness.*

I have never seen a case of choroiditis at all parallel to the one which I have now to relate.

James Smith, æt. 31, came under my care at Moorfields on September 27, 1869, complaining that his sight had failed gradually from January to June of the present year. He had been discharged from the army on account of blindness. He had never been abroad, and was stationed at Canterbury when the disease began. He considered himself in good health, but he had a sallow faded-leaf complexion. He had bare perception of light and shadow.

He had a chancre in 1860 (nine years before admission) and was salivated for it; but he was under treatment only about a fortnight, and did not seem to have had any secondary symptoms. In 1868 he lost part of his uvula and soft palate, but had no other tertiary symptoms.

Examination of the Eyes.—The pupils were rather small, and the *irides* very sluggish. Under atropine they dilated and remained circular, but on careful inspection a few traces of pigment were discovered on the capsule of the lens in each. The *vitreous* in each eye was hazy, and although but few distinct flocculi could be seen, the haze was sufficient to interfere very much with the inspection of the fundus. The floating films were more abundant in the right than in the left. The condition of the *fundus* was almost exactly the same in each eye. The *discs* (which were seen with difficulty) were rather pale, but not remarkably so; and the central artery and vein were much diminished in size. Near to each *yellow spot* there was a conspicuous, large, straggling patch of grey-white colour, the nature of which was not very clear; it seemed to be a deposit upon the choroid. It was not pigmented. The *choroid* in other parts was covered over with coal-black patches, which were especially abundant towards the periphery (choroiditis-disseminata).

The case was clearly one of symmetrical choroiditis of very unusual extent, and producing the very unusual result of entire blindness. Taking the disease of the throat into consideration, there could be no doubt that the disease was syphilitic. This diagnosis was confirmed by the combination of conditions found in the eyes—the deposit of pigment on the anterior capsule, the opacities in the vitreous, the choroiditis. No doubt the extinction of sight depended chiefly on the large patches of effusion which had occurred near the yellow spots.

We may note that the tertiary phenomena of syphilis are but rarely symmetrical, and that the common form of syphilitic choroiditis very seldom causes absolute blindness, although it often impairs sight greatly. It is also of interest to observe, as regards the history, that although there could be no doubt as to syphilis, the man, as far as he knew, had never had secondary symptoms.

No. LVII.—*Purpura (one month) with Bleeding Spots on the Eyelid (one week)—No disturbance of General Health.*

The following case is as much of medical as ophthalmic interest. It was, however, the local symptoms which had claimed attention, and they certainly were, at first sight, somewhat alarming.

Sarah L. Baker, æt. 4, a healthy and remarkably vivacious child, with fair hair and skin, was brought to Moorfields on October 4, 1869, on account of some large bleeding spots inside the right lower eyelid. The eye had become slightly sore about a week before admission, and two or three spots appeared soon after inside the lids.

About a month before admission the mother noticed a sudden eruption of small red spots, which she thought were flea-bites, on the child's neck and shoulders, and in a few days they spread to other parts, so that before long only the scalp remained quite free from eruption. The spots were most numerous on the neck and back, where they were quite thickly placed; there were only a few on the hands, feet, and face, while they were moderately abundant on the limbs. A number of bruises appeared on various parts of the skin about the same time, and without apparent cause. Two warts also sprung up, one of which (a small one on the right upper eyelid) had since disappeared, but the other (on the right knee) remained of considerable size, and had bled somewhat freely when the child fell and scratched it.

This eruption was not attended by any other symptoms, and the mother knew of no cause.

The child had measles last May, but recovered perfectly. None of her brothers or sisters had had an eruption like this one, but one was at the same time under care at Moorfields with corneal ulcers and eczema.

On admission the ears and scalp were the only parts quite free from spots. The spots were very numerous on the shoulders and neck, some few passing to the upper part of the neck among the hair, but not fairly on to the scalp. The spots were less numerous on the lower part of the back and on the front of the body, and comparatively sparse on the limbs; on the hands and feet only a few were seen, and they were for the most part ill-marked; they occurred on both surfaces of the hands and feet.

Inside the right lower eyelid near the outer canthus was a spot of purpura of comparatively large size; its surface was slightly raised above that of the surrounding conjunctiva, and blood oozed from it.

Several well-marked spots were seen inside the mouth, on the hard palate and buccal mucous membrane.

No. LVIII.—*Xanthelasma Palpebrarum*—*Amaurosis of Right Eye*—*Commencing Locomotor Ataxy*—*Alopecia of Scalp, Trunk, and Limbs*.

Joseph Pieri, æt. 57, an Irishman, had lived thirty-eight years in London; married, the father of fifteen children; had been a moderate drinker, and had never smoked; he was pale but in good general health; no liver complaint, no headache; he had known of the *Xanthelasma* spots on his eyelids for only about six months.

The sight of the left eye had been lost for many years, and that of the right for nine years. The sight failed in about six months without pain.

For about three years he had been liable to sharp shooting pains "like lightning," in various parts of the limbs and trunk, never in the head. He called the pains "Rheumatism."

About sixteen years ago he began to lose the hair of his scalp in patches; in six months he had lost nearly all the hair from almost all parts of his body and extremities.

The inner extremity of each eyelid, and the side of the root of the nose, was dotted over with yellowish spots of various sizes, the largest the size of a split pea, the smallest a pin's head; all were elevated, and in the centre of nearly all was a black point, apparently the choked orifice of a sebaceous follicle; some of

the larger are yellow, flat, and level, without any orifices, and in every respect characteristic of Xanthelasma. The majority of the spots were situated to the inner side of the eyelid on the side of the nose. There were several, however, on the eyelid. Those below the level of the canthus were very small. The disease was remarkably symmetrical with a few slight variations. He stated that he did not know what a "sick headache" was, and had never had headaches of any kind. The only symptom which seemed referable to the liver was pain darting across the lower part of the chest; this pain was very frequent, lasting often not more than two or three minutes at a time; he had suffered sometimes from flatulence.

He appeared to have had a perforating ulcer of the left cornea, and had had iridectomy performed seven years ago. He was then told that he had "amaurosis" of the right eye. On admission the right disc was found atrophied. The right pupil was small and motionless, and did not dilate in the dark. He had on admission only the barest possible perception of light, and cannot find a gas flame.

The symptoms of locomotor ataxy consisted in sharp darting pains "like lightning" in various parts of the limbs and trunk; never in the head. These pains were very severe indeed at the time, never lasted more than a few minutes; in walking he was often obliged to stop for a while on account of the sudden sharp pain in his limbs. He had no defect of sensation in his fingers, nor any weakness in his legs, but his gait was uncertain, and he stated that he would often fall if he were not very careful to catch hold of supports.

The hairs of his scalp and eyebrows were almost entirely absent, only a few scattered white ones remaining. At the time the alopecia began he had no symptoms of illness.

This case is of some interest in association with No. XLIX, in which also curious nervous phenomena had occurred in association with Xanthelasma. For the present I shall abstain from any further speculations as to the cause of the simultaneous production of this singular group of symptoms. I shall be greatly obliged to any medical friends who can afford me opportunities for investigating other examples of Xanthelasma palpebrarum.

AN ACCOUNT OF SOME PATHOLOGICAL SPECIMENS
RECENTLY EXAMINED.

By Mr. J. B. VERNON, Curator to the Hospital.

[* Those marked with an asterisk have been preserved in the Museum of the Hospital.]

**A Foreign Body embedded in a Blind Eye for twelve years without any mischief to the other Eye.*

IN April, 1868, Mr. Critchett removed the right eye of J. J., which had been blind for twelve years, after an injury by a chip of metal. The eye had become painful during the previous few weeks only, but the fellow-eye had never at any time been affected.

The globe was very soft; an old and opaque scar occupied the inner half of the cornea; the iris was entangled in the scar tissue, and there was no anterior chamber. The lens was not to be found. The vitreous chamber was filled by a white thready substance, like soddened connective tissue, to the naked eye, and consisting, when examined with the microscope, of irregular meshes of connective-tissue fibres containing numerous cells, some of which were nucleated, others spindle-shaped, mixed with pigment and fat granules. In the midst of this tissue was a rough fragment of brass, which still retained some of its colour and fresh appearance.

The coats of the eye were in their normal positions, but the retina could in some places with difficulty be distinguished from the tissue in the vitreous chamber, and seemed to have been changed into a yellow layer of a fibrous nature very intimately connected to the choroid on the one side, and to the hyaloid membrane on the other; all traces of its nervous structures had been destroyed. At the time of the operation a hard substance was felt in the anterior part of the eye, which was thought to be a mass of chalk or a new formation of bone.

Wound in the Ciliary Region—Sympathetic Irritation after an interval of twenty-five years.

In May, 1868, Mr. Couper removed the right eye of W. F., æt. 51 years. Twenty-five years previously, the eye had been

wounded by a fencing foil, a part of the foil seems to have remained in the eye for a time and was then extracted. The sight was at once completely lost. Occasional attacks of neuralgic pain and considerable difficulty in reading with the left eye induced him to apply to the hospital, and, except some tenderness when touched, nothing, he said, had ever called his attention to the injured eye.

The eye when removed was very soft and much reduced in size. Almost the entire cornea was opaque, and the ciliary region at the outer side was puckered by an old cicatrix; within the eye this part was much thickened by dense white scar-tissue, and it was evident that the ciliary circle had been completely cut across at the time of the accident. The retina was completely detached, and was separated everywhere from the choroid by a coffee-coloured fluid which contained cholesterine in large quantities, and which seemed to derive its colour from abundant pigment cells and broken-down blood. No traces of the lens remained, and the vitreous humour was reduced to a mere thread of fibrous tissue, which could hardly be distinguished from the wasted retina which surrounded it.

Two or three twigs of the ciliary nerves were to be seen running up to the mass of fibrous tissue which formed the scar.

At the time of operation the left eye was rather painful, constantly watering, and showed a well-marked zone of ciliary congestion.

**Foreign Body passing through the Eyeball and becoming embedded close to the Optic Nerve, and causing very extreme Irritation.*

Mary Renshaw, æt. 11 years, was amusing herself by exploding some percussion caps by striking them upon a stone; a splinter struck her left eye and she was brought to the hospital two days afterwards with a small cleanly-cut wound in the outer margin of the cornea, partial division of the iris and an opaque lens, and suffering very much from photophobia and ciliary pain. On November 13th, 1868, on the occasion of her second visit to the hospital, as her distress was not at all relieved, Mr. Bowman performed an iridectomy and removed the softened lens with a syringe. No foreign body could be detected. This operation produced very slight alleviation of the pain, which at times was

evidently very severe. On November 27th, Mr. Lawson removed the eye. There was more difficulty than usual in completing the operation and detaching the globe, the tissues behind it being very solid and resisting. The entrance of the optic nerve was surrounded by a firm fleshy substance which had made the division of the nerve more troublesome. A portion of similar material was left behind in the apex of the orbit.

No foreign body was to be found within the globe, but an opaque streak passed through the vitreous humour corresponding to the wound in the cornea and iris in front, to terminate at a small pin-hole aperture in the coats of the globe immediately to the inner side of the optic nerve entrance. At this spot a small quantity of blood had separated the retina from the choroid. Outside the sclerotic, exactly corresponding to this perforation of the coats, in close contact with the optic nerve and embedded in the fleshy substance above mentioned, the fragment of metal was found.

The fleshy growth which surrounded the foreign body was very vascular, and was evidently a new formation of granulation-tissue consisting almost entirely of pale nucleated cells, with a very scanty intercellular matrix and many capillary vessels.

The removal of the eye was followed by very free suppuration within the orbit, and complete cessation of all the child's suffering.

**Gun-shot Wound of the Eye, involving the Ciliary Region—Sympathetic Irritation of the other Eye.*

James M., æt. 26, on Christmas-day, 1867, was loading a double-barrelled gun, which exploded without any very obvious cause. The left side of his face and head were much injured, and his left eye became almost completely blind. On May 1st, 1868, he applied to Mr. Bowman on account of occasional very severe pain in the right eye. The injured eye retained a bare perception of light, but its fundus could not be illuminated.

The injured eye was removed; it was soft (T - 1); the cornea was clear, but the pupil was displaced by the iris having been drawn inwards to become entangled in a scar in the ciliary region, as though an iridectomy had been performed.

On opening the eye the retina was found detached, except on

the inner side, where a cicatrix united all the coats together. The scar extended from the wound in the ciliary region in front—the entrance wound—to another wound in the sclerotic at the equator, through which it seemed probable that the shot had left the globe.

Wound of the Ciliary Region—Sympathetic Irritation of the other Eye.

Isabel Turner, æt. 22 years, was struck in the left eye with a piece of a tobacco-pipe from a toy-gun in January, 1868. The sight of the eye was at once destroyed. The vitreous humour seems to have escaped, and there was very free bleeding at the time. The eye became much shrunken, but did not trouble her for some months. In May, 1868, she applied to Mr. Streatfeild on account of very severe neuralgia in and around the globe, and so much weakness in the other eye, that at times she was quite unable to do any work. This (right) eye was rather tender, its ciliary vessels were very much injected, and the pupil was rather inactive.

The remains of the injured eye were removed on May 4th. The entire cornea was opaque and much puckered by a cicatrix involving the ciliary region. The retina was detached, shrunken, and opaque, and was torn away from its junction with the optic nerve. A small quantity of clear yellow fluid separated it from the choroid.

Wound in the Ciliary Region—Rapid Sympathetic Irritation of the other Eye.

James Eyre, æt. 26 years, came to Mr. Lawson, May 19th, 1868. The day previously the front of his right eye had been lacerated by a large, rusty nail. Some vitreous humour had escaped, for the eye was smaller and softer than its fellow, and was very painful, and had lost all perception of light. The cornea and ciliary region were traversed by a ragged wound, and the anterior chamber was filled with blood.

In a week from this time, the symptoms were not in any way relieved by treatment, and he now complained of weakness and watering of his left eye.

The injured eye was removed on this his second visit. Some vitreous humour and portions of the lens escaped from the wound during the operation. The retina was detached from the choroid by recent hæmorrhage. After the operation he had no further annoyance.

** Punctured Wound of the Eyeball from above, involving the Ciliary region and causing irritation of the other Eye.*

On May 21st, 1868, Mr. Hutchinson removed the right eye of Harriet Chapman, æt. 35 years. Five weeks before her coming to the hospital, she had fallen upon a dinner-knife while running upstairs; the point of the knife—a very sharp one—cut through the eyebrow above the upper eyelid and entered the globe. All vision in the eye was lost at once, and for a day or two she had some pain in it, and in less than a fortnight she felt occasional pain, and dimness of vision which increased in the other eye.

When removed the globe was soft, the cornea was transparent except where a scar ran across it over the pupil and involved the ciliary region at each extremity, the iris was adherent to the back of this scar, and the anterior chamber was lost. At the upper and posterior part of the globe, just above the optic nerve, was another scar in the sclerotic, about half an inch long, to which the soft tissues of the orbit were closely adherent, as though the point of the knife had emerged from this spot.

The lens had probably escaped at the time of the accident, no traces of it remaining. The retina and choroid were entangled in the cicatrix in the sclera posteriorly, but elsewhere the retina was separated from the choroid by a yellow curd-like substance, which appeared to be discolored blood.

Wound of the Ciliary region, prolapse of Iris, Sympathetic Inflammation, Iritis, etc., in the other Eye.

On June 11th, 1868, Mr. Couper removed the right eye of Harriet Lane, æt. 11 years.

On May 4th her eye was struck by a stone, and she presented herself with a wound of the cornea and a prolapse of

the iris, which was covered with lymph. An opaque grey mass was to be seen deeply-seated in the eye. The prolapsed portion of iris was removed.

The left eye was congested, and at times pained her. The iris was discoloured and thickened, its fibrous appearance almost lost, the pupil very sluggish even under a strong solution of atropine. The posterior layer of the cornea was dotted with small opaque spots. The vision with this eye was $\frac{20}{50}$ (Snellen).

No remains of the lens were to be seen when the eye was opened. The vitreous humour was clear, but of a yellow colour. A firm white cicatrix occupied the inner aspect of the ciliary region, the iris being adherent in it, and the ciliary processes having been completely cut through.

An iridectomy was afterwards performed with beneficial effect upon the left eye.

TUMOURS AND NEW GROWTHS, ETC.

* *Cysticercus-cellulosæ* behind the Upper Eyelid.

Anna B——, æt. 7 years, was brought to Mr. Streatfeild, on July 4th, 1868, on account of a swelling beneath the right upper eyelid, which her mother had observed for six months, and which was said to be gradually increasing in size.

The eyelid was prominent and drooping, but not red or swelled. On examination it was found to be quite natural, but was pushed forwards by a swelling of the conjunctiva above and rather to the inner side of the eyeball. The swelling was about the size of a nut, very movable, and when pressed could be pushed back into the orbit, to re-appear when the finger was removed, its surface was quite smooth. The movements of the eyeball were not interfered with, and the vision of the eye was perfect. There was some conjunctivitis, and this was said to be habitual.

The cyst, for such it was considered to be, was readily removed. When opened there escaped a small quantity of thin puriform fluid, in which floated a small clear vesicle about the size of a pea. The cyst had thick walls which were lined by a smooth membrane, and seemed to be formed of layers of dense connective tissue. The vesicle which it contained had

transparent walls, except where a dull, white spot marked the position of the head of the hydatid.

** Cysticercus-cellulosæ beneath the conjunctiva at the inner angle of the Eyelids.*

Mary L——, æt. 5 years, was brought to Mr. Wordsworth, April 28th, 1868, because her mother had noticed a swelling in the corner of the left eye, which had made its appearance during the last month, and was rapidly increasing in size, and causing some pain and inflammation of the conjunctiva.

Immediately beneath the plica-semilunaris was a semi-transparent globular swelling, about the size of a small hazelnut, not very movable and firmly attached to the subjacent parts. There was some little difficulty in removing it, as its attachment to the sub-conjunctival fascia was thick and very firm. During its removal the tumour was opened, and there escaped a small quantity of pus and a beautifully clear cyst, almost transparent and without any opaque portion of its walls as in the last specimen.

Fibro-cellular Tumour surrounding the openings of the Lachrymal Ducts.

Clara F——, æt. 23 years, came to Mr. Streatfeild, April 27th, 1868, complaining of a growth which bulged from beneath the outer part of the left upper eyelid. Its surface when thoroughly exposed by elevating the eyelid was smooth and soft, not transparent, very movable, and giving the impression of containing fluid. It had been observed during the last six months.

The growth was easily removed with scissors, and without chloroform. It was soft and lobulated, having the appearance of yellow fatty tissue, with a network of firm white fibrous tissue. A more complete examination with the microscope showed it to be an ordinary fatty tumour, with a delicate framework of connective tissue fibres.

* *Fibro-cellular and Fatty Tumour with Hair attached, growing around the openings of the Lachrymal Ducts, associated with a Supernumerary Lobule of the Ear on the same side.*

— —, æt. 19 years, came to Mr. Wordsworth on account of a growth which projected from beneath the upper eyelid and between the junction of the two eyelids on the right side. The growth was very firm and not very movable, and its surface was smooth and even. From its most prominent margin there were projecting some ten or twelve very fine dark hairs about the length of ordinary eyelashes.

Attached to the right cheek, immediately in front of the lobule of the right ear, was a small fleshy growth, hanging by a thin but very firm pedicle, apparently a rudimentary lobule to the ear. Both this and the growth in the orbit were removed at the same operation.

The supplementary lobule consisted of firm, condensed fibrous tissue, and its pedicle, at the point of attachment to the cheek, contained a thin plate of fibro-cartilage. The growth from the orbit contained a good deal of fat, but consisted principally of fibrous tissue, more so than the last specimen. The fat cells contained very beautifully-marked feathery crystals of margarine.

A collection of small Cysts removed from the Plica-semilunaris.

Jane Benson, æt. 24 years, came to Mr. Dixon, June 28th, 1868, on account of a swelling at the inner angle of the left eyelids. On examination it appeared that the conjunctiva on the inner aspect of the eyeball was much thickened and irregular, and dotted with small vesicles. The vesicles and the surrounding conjunctiva were snipped away with scissors. There were five cysts in all, the largest of the size of a small pea, the least no bigger than the head of a pin; their walls were perfectly transparent and their contents were clear and colourless, and without cells of any kind which could be recognized with the microscope.

On June 24th, Mr. Hutchinson removed a small cyst of the size of a small shot, which was situated upon the conjunctiva at the outer aspect of the eyeball of a boy, the cyst walls appeared to be entirely supplied by one long and tortuous artery, which was accompanied by its corresponding vein.

** Syphilitic Panophthalmitis, with other symptoms typical of inherited Disease.*

Oswald Currie, æt. seven months, was brought to Mr. Streatfeild in May, 1868, perfectly blind, and extremely ill and emaciated. He was said to have had a severe illness, with a red rash, when six weeks of age, during which his eyes had remained closed through swelling of the eyelids, and that he had never seen anything since.

There was well marked iritis in the right eye, with effusion into the anterior chamber, and general increase in size of the whole globe. The left eye was enlarged by distension and thinning of the cornea, and the whole ciliary region. The child was evidently in great pain, and continually rubbing its right eye, the child's body was covered with a scaly and papular syphilitic eruption, he could hardly breathe through his nose, the bridge of which had completely sunk in.

The child's mother was 25 years of age, she had been married seven years, and during that period had had four miscarriages, all at about the sixth month of pregnancy, and the child she now brought was the only child that had been born alive.

The right eye was removed to relieve the child's pain. It was slightly enlarged, and softer than usual, the anterior chamber was half filled with puriform material, and the lens, which was quite opaque, and the ciliary processes were surrounded on all sides by a whitish deposit which appeared to consist of *débris* of cells mixed with some recent hæmorrhage, posteriorly the retina was detached from the choroid by a large quantity of a similar substance.

Syphilitic Panophthalmitis.

On July 7th, 1868, Mr. Lawson removed the right eye of ———, æt. 35 years, who had contracted syphilis twelve months before, which was followed by iritis, for which he was treated, in Dublin, by Sir W. Wilde with iodide of potassium and mercury. For the time he considered himself cured, but in January he found his right eye to fail him again, and being in London he applied to Mr. Bowman, who sent him to the hospital.

There was considerable effusion of lymph both in the anterior chamber and behind the iris, he had only just a bare perception of light, and was in constant pain, during the last few days also the eye had become considerably enlarged. A week later, when he came a second time to the hospital, he was suffering acute pain, there was extreme chemosis, and the whole cornea was opaque and softening. The eyeball, too, was so enlarged that it projected from between the swollen eyelids.

There was some difficulty in completing the removal of the eyeball, as the tissues of the orbit were matted together, and the contents of the globe escaped, they had assumed the form of a firm gelatinous yellow white mass of lymph in the centre of which was some softer material, with all the appearances of ill-formed pus. The retina and choroid were thickened and separated from each other by a thick puriform fluid; around the ciliary processes was some recent hæmorrhage.

**Suppuration of the Eyeball, simulating an Intra-Ocular malignant growth.*

— — —, æt. seven years, a very precocious, healthy-looking girl, had been complaining for some months of pain in the right temple, and though she very often rubbed her right eye, no especial attention was drawn to it; at this time (November, 1868) she came with her parents from America, and was put under medical care in London; about three weeks after her arrival the eye became enlarged, prominent and very painful, the eyelids became swollen also, and an opaque substance was noticed behind the pupil.

Mr. Critchett saw the child with Mr. Bowman, the case was considered to be an intra-ocular growth, and immediate excision was advised.

The child was very nervous and sensitive, but did not seem in much pain; the eyelids were red and swollen, the eyeball rather prominent, the pupil dilated, very sluggish, and displaced inwards, behind the lens was an opaque yellow-looking mass, without blood-vessels on its surface, which seemed smooth and uniform in colour, the ciliary vessels were injected, and there was slight chemosis; the eyeball was rather hard, and its coats

were bulging on the inner side, hence the distortion of the pupil. This bulging of the coats of the eye from within was very marked after removal; the optic nerve when it was divided seemed healthy.

No tumour or growth of any kind was to be seen within the eye; the vitreous humour was completely changed into a mass of consistent pus, which was more tenacious and gelatinous where it was in apposition with the retina. The latter was thick and opaque, and very readily torn. The choroid was soddened, and everywhere infiltrated with pus, and on the inner side corresponding to the bulging of sclerotic, the pigment layer on its inner surface was entirely destroyed.

**Glioma of Retina, rapidly recurring after removal.*

On June 11th, 1868, Mr. Hutchinson removed the left eye of George Felton, æt. 3 years, on account of an intra-ocular growth. The child was pale and thin, and for the previous six months its mother had noticed a greenish reflexion from within the eye, which during the last week, had become very painful.

The cornea was steamy, the pupil dilated and fixed, but it was almost impossible to use the ophthalmoscope on account of the extreme intolerance of light. The tension of the globe was considerably increased, and it was very tender when touched.

After removing the eye, the cut end of the optic nerve looked so dark and enlarged, that Mr. Hutchinson removed an additional portion of it which appeared to be surrounded by a dark-red fleshy substance.

The lens and anterior portion of the vitreous humour had retained their transparency, but the remainder of the vitreous chamber was occupied by a yellowish-white thick material, which had completely destroyed all the coats of the eye posteriorly, so that their identity could not be established, and it was not possible to see where the optic nerve entered the eye, or where it had joined the retina within. The colour of the new growth, for such it was, evidently became darker, and as though blood-stained until it merged into the deep colour of the fleshy material above mentioned around the optic nerve in the orbit, or under the microscope. Those darker portions of the growth contained a large quantity of blood-vessels and extra-

vasated blood; the paler and anterior portion consisted of a collection of small round cells filled with nuclei, and a scanty intercellular matrix of very delicate fibres; there were very many free nuclei, and scattered here and there were large dark pigmented cells like small mulberries.

The entire retina was involved in the growth, but the choroid, except where it had been destroyed posteriorly, was unaltered.

The child remained well until October, when his mother noticed some swelling of the lower eyelid. On November 30th, Mr. Hutchinson divided the lower eyelid vertically, and removed a firm, fleshy growth, the size of a large walnut, from the orbit. It had very slight connexion with the surrounding parts, except at the apex, where it was with difficulty detached.

It was firm, pinkish in colour, with dark liver-like patches interspersed throughout it, and consisted of two lobes which had grown one upon the other. The posterior of these two was more vascular and darker coloured than the anterior. Under the microscope its main elements were the small uniform cells which had been so abundant in the original growth.

**Double Glaucoma—Extirpation of one Eye—Rapidly growing Sarcoma springing from the Sheath of the Optic Nerve—Repeated Recurrence after several Operations.*

John Shropshire, æt. 57 years, came to Mr. Streatfeild on March 2nd, 1868. Three years previously his left eye had become completely blind, after he had suffered all the typical symptoms of glaucoma, but he had not thought it worth while to have any medical advice. Three weeks previous to his coming to the hospital, the right eye had suffered in the same way; and when he had just a perception of light remaining he applied to Mr. Streatfeild.

An iridectomy was performed on the right eye, and was followed by an almost complete restoration of sight. The left eye, being quite blind, was removed. The lens was opaque; the retina was detached in the lower part by a good deal of fluid; the vitreous humour was much diminished in quantity; and, when examined by the microscope, contained very many cells and imperfectly formed fibres.

There was no appearance of a new growth in the eye. He wore an artificial eye for one day only, and discontinued its use because it pained him. The socket always discharged freely, and on June 15th, 1868, he came again to Mr. Streatfeild.

The vision of the right eye remained very good, and the iridectomy had completely relieved all the symptoms as far as this eye was concerned. The left eyelids, however, were very dusky and swelled, and on separating them the conjunctiva was seen to be pushed forward by a firm elastic growth behind it. The growth was easily and completely removed without much dissection, and with it a portion of the optic nerve, half an inch in length, was removed at the same time; it was about the size of an egg, very firm and elastic, and when a section was carried through it and through the portion of included nerve, it was evident that it had sprung from, and was attached to the sheath and to the soft tissues immediately around the optic nerve. The nerve-fibres themselves were wasted, but their termination was very distinct, and was very abruptly defined, and under the microscope the nerve-fibres appear converted into fat. The tumour itself consisted essentially of fibrous tissue, the fibres being pale, but in the firmer portions very well developed. There were patches of extravasated blood here and there, and, in some places, where the tumour was less firm, it contained a large number of cells and masses of pigment; many of these cells had long delicate processes, as though they were undergoing a change into fibres.

The disease has returned, and has been removed as completely as possible no less than five times, on two occasions. The actual cautery and caustic paste has been freely applied. The last operation was undertaken on January 25th, 1869.

CASES ILLUSTRATING THE RESULTS OF WOUNDS OF THE EYE.

By J. W. HULKE, F.R.S.

THE following cases are good illustrations of some of the kinds of wounds which may be often seen at every large ophthalmic hospital. They show, amongst other things, how an apparently very slight hurt will sometimes be followed by the direst consequences; and, on the other hand, how good recoveries are sometimes made from desperate injuries. In the first case, the relief afforded by iridectomy was very striking. As a rule, the local use of belladonna, and the internal administration of sedatives (of which morphia and henbane are the best) with bark, where the patients are feeble, give better results than mercurials, and what is commonly known as an orthodox antiphlogistic treatment. In the 1st, 2nd, and 4th cases it was, from the first, evident that the eyes were lost.

CASE I.—Contusion of the Eyeball with a blunt Arrow—Five days afterwards acute Inflammation, with great Tension—Iridectomy for the relief of Pain, and of the other Inflammatory symptoms.

A healthy little girl, æt. 3, was hit on the left eye by a child's brass-tipped arrow. Two or three drops of blood flowed from the corner of the eye, probably from the lid or conjunctiva, because the mother, a very intelligent woman, said that the appearance of the pupil and of the eyeball was not changed, and a surgeon who saw the child a few minutes after the accident, assured her that the arrow had not pierced the eyeball. Two days later the mother noticed that the pupil was square. The child at this time could distinguish large objects correctly. Five days after the wound the child began to scream. She was very feverish; the eye became very red and excessively painful. She was thought to have meningitis, and was very actively treated as for this, but, not improving, after a fortnight's treatment, her mother brought her to the Royal London Ophthalmic Hospital, October 7, 1868. The eyeball was then very hard, denoting a

great excess of intraocular tension, and it was very red. The anterior chamber was full of blood, which completely hid the iris. The cornea was dull, and all power of perceiving light was lost. The child cried much on account of very severe aching of the eyeball, and of the head, and she was very pale and wasted.

For the relief of the tension of the eyeball an iridectomy was done. On completing the sclero-corneal incision, a considerable coagulum was extruded, much larger than the normal anterior chamber could contain. At my next visit, three days after, the tension was normal, the cornea was bright, the child was free from pain, and cheerful. The redness soon disappeared, and she was quickly convalescent. The last note says—the cornea and the aqueous humour are clear, the pupil is widely dilated and motionless, the lens is slightly dull, and vitreous humour gives an opaque greenish-yellow reflexion.

CASE II.—*Slight Graze of the Cornea—Ophthalmitis.*

A tall brunette, æt. 28, a cook, struck her left eye slightly with a blunt fork. She ran to a neighbouring hospital at once, where she was told it had not hurt the sight; and indeed she says herself that she saw well at that time. Redness and swelling, with great pain, soon set in, and, four days after the accident, when she came to the Royal London Ophthalmic Hospital, September 9th, 1868, there were marked signs of ophthalmitis and of extension of the inflammation from the eyeball to the cellular tissue of the orbit. The cornea was dull, and a slight superficial scratch on it, which had certainly not penetrated the anterior chamber, was the only trace of wound. The pupil was turbid, dilated widely, and motionless, and there was a deep-seated, yellowish-green glimmer behind the lens. The conjunctiva was very red and oedematous, and it exuded a copious, flocculent, mucous discharge. The eyeball was slightly protruded, and its mobility was much curtailed. The eye still retained good quantitative perception of light. She was very pale and feeble, and much worn by severe pain in the eye and head. Before coming to the hospital, she had been actively depleted and restricted to a very spare diet.

Under the local use of compresses, dipped in a warm infusion of belladonna, and the internal exhibition of sedatives and tonics, she made a quick recovery. The eyeball wasted and occasioned no further trouble.

CASE III.—*Penetrating wound of the Eye by a Red-hot Splinter of Iron—Recovery with perfect Sight.*

A rivetter while at work was struck by a splinter of a red-hot rivet in his left eye, in which it remained sticking (about six or seven seconds as well as he could judge) until he pulled it out, in doing which it burned his fingers. The splinter was about $\frac{1}{2}$ an inch long, $\frac{1}{4}$ of an inch broad at one end, and it tapered to a point at the other end, which pierced his eye. Next morning, when he came to the Royal London Ophthalmic Hospital, August 29, 1867, a burned wound was seen at the extreme edge of the cornea, through which the aqueous humour was draining away, and corresponding to this there was a horned notch in the upper and in the lower eyelid.

Under the use of ice and a solution of belladonna, he made a quick recovery, but he was kept under observation till October. When next seen, in February, 1868, an inconspicuous mark on the eyelids, over which a speck, about $1\frac{1}{2}$ inch broad, at the sclero-corneal junction were the only remaining traces of the injury. He read No. 1 of Snellen's types correctly.

CASE IV.—*Penetrating Wound of the Eye by a Splinter of Iron—Ophthalmitis.*

A smith, æt. 32, had his right eye struck by a splinter of iron, which his mate took out directly with a knife. In a few hours violent inflammation set in, and he presented himself as an out-patient next day at the Royal London Ophthalmic Hospital, October 7, 1868. When the cornea was directed strongly downwards and outwards, a minute wound (in all other positions of the eye it was hidden by the upper eyelid) became apparent in the sclerotic about 5 inches distant from the upper and nasal border of the cornea. The iris was greenish (the other iris grey), and the pupil was cloudy. The visual acuity was much diminished—he saw things as through a dense smoke. The conjunctiva was very red and oedematous, and it exuded a copious, flocculent, mucous discharge.

At his next visit, three days later, the inflammation was more intense, and the sight of this eye was reduced to quantitative perception. After this the pain and hyperæmia slowly abated, and the eyeball wasted.

THREE CASES OF OPTIC NEURITIS.

By J. W. HULKE, F.R.S.

CASE I.—*Double Optic Neuritis, consecutive on Intracranial Disease, probably Tubercular.*

A pale, rather under-sized lad, æt. 15, was admitted into Percy Ward, November 3rd, with inflammation of both optic nerves. His pupils were dilated and motionless. The ocular media were clear. There was not any externally visible congestion. Both eyes were quite blind. The optic nerves were swollen, and the venæ centrales were particularly turgid, but the nerves were not quite so opaque as in some cases.

He had always been a nervous, excitable child. His present illness began one year ago with vertigo, and with headache, which he described as a feeling of pressure on the back of the head. About this time his arms were very tremulous, and afterwards his legs became unsteady, so that he had some trouble in maintaining his equilibrium, which symptom still remains. His sight began to fail about the time that he first suffered from headache. His mother was healthy, and his father had lived to 70, but five brothers and sisters had died in early infancy.

In this case the disease is probably tubercular, and the reference of the pain to the back of the head, together with the evident want of regularity in his muscular movements point to the cerebellum as its seat.

CASE II.—*Double Optic Neuritis, consecutive upon Intracranial Disease, probably Syphilitic.*

A farrier, æt. 34, was admitted into Forbes' Ward, October 16th, under Mr. Hulke's care, with double neuritis optica. His visual fields were much diminished, and his visual acuity was so blunted, that, with the left eye, he could only spell short words in No. 16, and with the right eye words in No. 20 of Jaeger's scale of types, which correspond nearly to 2-line Great Primer, and 8-line Roman type of English printers. The pupils were

large and sluggish. There was slight divergence of the optic axes, and a want of harmony in the movements of the eyes. He complained of severe pain through the temples, and of great weakness.

Both optic nerves were very swollen, and so opaque, that within the area of the nerve disc the arteria centralis was quite hidden, and the veins were much obscured, while the branches of the latter in the retina were conspicuous by their turgescence and by their tortuosity.

He stated that his illness had begun a year ago with violent pains in the forehead and temples, from which he had since then never been free. The pain was very severe and paroxysmal, and soon after its commencement he first noticed his sight defective. The defect was a dimness, which constantly increased; its intensity, however, varied sometimes very greatly in the same day.

The only previous illness which he remembered was a chancre with buboes, which did not suppurate, twelve years ago.

Since he has been in the Hospital he has become quite blind, very deaf in both ears, and much more feeble, so that he now walks with difficulty. He has also, on several occasions, had retching, which could not be fairly attributed to any error of diet.

The opaque swelling of the optic nerves, and the turgescence of the venæ centralis, have both much increased.

The diagnosis made is neuritis optica, consecutive upon syphilitic inflammation, producing gummy swelling of the dura mater or of the bones of the basis cranii, and the treatment has been the exhibition of iodide of potassium, of which, unfortunately the patient is not very tolerant.

Very likely we have here inflammation, advancing along the neuroglia from the optic chiasma or intracranial part of the nerve trunk between the chiasma and the foramen opticum, in relation with the syphilitic disease within the skull, and thence outwards along the orbital segment of the nerve trunk to its intraocular end. It is also very probable that obstruction of the cavernous sinus may be another factor of the optic neuritis.

CASE III.—*Consecutive Double Optic Neuritis.*

A little girl, æt. 7, perfectly blind, was brought to the Royal London Ophthalmic Hospital, October 21st, 1868. Widely dilated

and motionless pupils were the only externally visible signs of disease.

The optic nerves were swollen and opaque, and the venæ centrales were obscured within the limits of the nerve-discs, while, in the transparent retina, they were seen to be distended and tortuous.

Her father said that she had always been healthy till five months before, when her present illness began with listlessness, then drowsiness, moaning in her sleep, and retching. These symptoms lasted about one month, during which she lost her sight, and then disappeared, leaving her seemingly in good health.

A month later the optic nerves were whiter and less opaque, their contours were ragged, the arteriæ centrales were very small, and the veins not too full, but still tortuous. In the further progress of this case the nerves underwent thorough atrophy, while the child's health improved, and she became relatively robust.

PART II.

A Periscope

OF

CONTEMPORARY OPHTHALMIC LITERATURE.

A NEW SERIES OF TEST TYPES.

Dr. John Green, of St. Louis, has laid before the American Ophthalmological Society a new series of test-types for determining the acuteness of vision. He says:—

“The letter proven of Snellen are the acknowledged standard for this purpose; but they are somewhat imperfect both in plan and in the execution of the smaller letters. The defects in plan consist in the selection of letters which are not so uniform in size and character as is to be desired, and still more in the fact that the gradations of size in the consecutive numbers of the series are not uniform. Thus, the successive numbers CC, C, LXX, L, XL, XXX, and XX of Snellen give the very unequal series of ratios, 1-2, 7-10, 5-7, 4-5, 3-4, and 2-3. In a communication made to the Society in 1867 I exhibited a series of test-letters, of sixteen gradations of size, in which a constant ratio of 7-10, or, more exactly, .7069, was adopted. This series included all the higher and lower numbers of Snellen, but differed from that standard in the middle of the scale, for which reason the proposed change could not be very warmly advocated, notwithstanding the evident correctness of the principle on which it was based. I have now to propose a new series of twenty-four numbers, bearing the constant ratio of .795, and combining the advantage of regular geometric progression with the preservation of all the important numbers of Snellen.

“The following table shows this new series side by side with those of Snellen and Giraud-Teulon. The common ratio is found by the formula $x = \sqrt[3]{.5} = .795$ nearly.

Exact Series, ratio .795.	Approximate Series.	Series of Snellen.	Series of Giraud-Teulon.
200	200	200	200
159	160		
126.4	126		
100	100	100	100
79.5	80	70	75
63.2	64		
50.	50	50	50
39.7	40	40	40
31.5	32	30	30
25	25		
19.8 +	20	20	20
15.75	16	15	15
12.5	12.5		
9.9 +	10	10	10
7.87	8	8	7.5
6.25	6.25	{ 7 6 }	
4.96 +	5	5	5
3.93 +	4	4	4
3.125	3.125	3	3
2.48 +	2.5		
1.96 +	2	2	2
1.56	1.56		
1.24	1.25		
.98 +	1	1	1

“In the selection of letters for tests of vision it is most important to choose those which are most nearly uniform in size and character, and which are, at the same time, as little complex as may be in their formation. It is impossible, however, to invent even a small series of letters which shall be strictly equal in size and uniform in design; and experience shows that any series, however limited, may be divided into letters of easier and of more difficult recognition. Letters made up wholly or in part of oblique lines, and also letters in which the horizontal elements greatly predominate, are very unequally affected by different forms of astigmatism, and may, therefore, be advantageously rejected. Rejecting for these reasons the letters A B K M N R S V W X Y Z, there remain fourteen to which these objections do not apply, namely, C D E F G H I J L O P Q T U. Of these, the letters C G O Q, which are modifications of the circle, are smaller than the square letters of corresponding height and width, and, as a fact, we observe that they are less easily recognized. The letters C and G, F and P, D and O, also are less easily distinguished from each other than from most of the other letters. These minimum deviations from strict uniformity are, however, of no special disadvantage, for they afford us a

convenient means of drawing somewhat wider distinctions than if the letters were absolutely uniform. Thus, we designate any degree of vision by the size of the letters positively and accurately named; but if only the easier letters of the line are distinguished with certainty, we note the number with the addition of the minus sign; or if only one or two of the very easiest are made out, we note it by the next lower number with the addition of the plus sign.

“The form of letter adopted is that known to printers as Gothic, and each letter is drawn, as nearly as good proportion will admit, within a square; they are, on the whole, much simpler in construction, and more nearly equal, than any before published. The arrangement of the whole series upon a single sheet is a matter of very considerable convenience, especially when the tests have to be used in a room less than twenty feet in length. This is easily and satisfactorily accomplished by making the spaces between the adjacent lines proportionate to the height of the letters.”

The same author has also devised a series of improved tests for astigmatism, both colour tests, and tests depending solely on the directions of lines. With regard to the first he says:—“It was only by making trial of transparent colours of great purity and brilliancy, illuminated by transmitted light, that I have succeeded in attaining results at all satisfactory. The best material for these tests seems to be thin paper, dyed of the requisite shades, and rendered nearly transparent by saturating it with clear white varnish or Canada balsam. The colours with which I have been most successful are carmine, red, and ultramarine blue. The red paper is best prepared by dyeing thin tissue or copying paper in an ammoniacal solution of carmine, and smoothing it by pressure while still slightly damp. When perfectly dry it is cut into strips or sections, according to the form of the diagram to be made, and mounted upon a plate of glass or a stretched piece of thin white muslin, and varnished. Blue tissue paper, of pretty good tint, may be purchased, but I have obtained a better by the employment of the finest ultramarine ground in oil, and thinned with clear white varnish. This is applied with a soft brush to paper previously prepared by saturating it with the same white varnish. When dry, the transparent blue paper is cut to the desired form, and mounted with the red upon the glass or muslin. A single coat of varnish upon the muslin back will heighten the transparency of the diagram, if desired. The tests thus prepared are hung in a window (not in the direct sunlight), and viewed from the opposite side of the room. The difference in tint observed in the different lines in cases of even very low grades of astigmatism is well marked, and will often attract the attention of persons whose appreciation of form and whose conception of distinct definition in the visual

act is inferior to their power of appreciating and discriminating colour. The form of diagram recommended consists of twelve radiating lines of either colour, of a width corresponding to No. C of Snellen's test-types, arranged like the spokes of a wheel, and separated by interspaces of the other colour."

The linear tests consist of a series of diagrams in which lines are so combined and arranged that the necessary inquiries are soon made and replied to, and that the determination of the presence and degree of astigmatism may be easily made part of every examination of the state of vision. It would be difficult to explain the figures in words; but they are all given, together with the colour diagrams and test-types described above, and with full instructions for their use, in the "Transactions of the American Ophthalmological Society (1869)." To this volume the reader must be referred for more exact information.

A NEW FORM OF CYSTOTOME.

Dr. G. Hay, of Boston ("Trans. of Amer. Ophth. Soc., 1869"), recommends a new form of cystotome for modified linear extraction of cataract. The shape proposed is such as would be obtained by first lengthening, to the extent of four lines, the stem of the ordinary straight instrument, and then by bending the lengthened stem at right angles to itself at a point four lines distant from its toothed extremity, and as if, in the bending, this extremity were moved in a direction the opposite of that in which the tooth projects. Owing to the position of the incision (says Dr. Hay) which intersects the outer convex surface of the sclerotic in a line about the length of the diameter of the cornea, and which lies symmetrically above the cornea, each of its extremities being only a short distance—from two-thirds of a line to a line—below the level of the top of the cornea, it is difficult and dangerous to introduce the ordinary straight instrument. If the cornea is not drawn down far, the lens is in danger of being dislocated by the instrument, the eyebrow preventing the handle from being sufficiently depressed to keep the point far enough forward towards the cornea. If, on the other hand, the cornea is sufficiently drawn down, then the strain on the eye may cause rupture of the zonula, with escape of vitreous, certainly a very unfavourable complication. The instrument used by v. Graefe is differently shaped, it is said, according as the right or left eye is to be operated on. The modification here proposed is simpler, one instrument serving for both eyes. It can be easily and safely manipulated, allowing the division of the capsule, without drawing the cornea down as far as is required in using the straight instrument.

(Perhaps the best cystotome for modified linear extraction is a simple sharp steel hook, mounted as a mere point on a platinum

or other flexible metallic stem, which can be bent at any angle, in accordance with the requirements of the case.)

CORNEAL SUTURES AFTER FLAP EXTRACTION.

Dr. H. W. Williams, of Boston, has presented to the American Ophthalmological Society (*Transactions*, 1869) statistics of forty-four additional cases, in which he employed his method of corneal suture after flap-extraction. Four of these cases were still under treatment at the time of the communication, but in all of them a good result seemed to be already secure, the corneal wounds having united without accident, and the pupils being clear.

Thirty-two cases have been completely successful, the patients being able to read ordinary print. Four cases are partially successful, slight obstructions of the field of the pupil preventing perfect vision; but in all of these complete success will doubtless be obtained by slight secondary operations. In two of the remaining four cases of failure a most unfavourable prognosis was given previous to the operation, on account of irido-choroiditis from which the patient had suffered, and for which he had undergone iridectomy. In one of the other cases the patient insisted on going home a few days after the operation, returning some time after with occlusion of the pupil and obliteration of the anterior chamber by displaced iris, though the corneal wound had united well, and this structure continued clear. In the other case the cornea assumed a sloughy look on the second day, perhaps, I feared, on account of dampness of the room occupied by the patient. In no case have any unfavourable symptoms beyond, in some cases, a slight irritation, arisen, which could possibly be ascribed to the suture, and it has seemed to me that the healing of the wound has been accelerated and hernia of the iris prevented by its use, thus securing obvious and important advantages, and shortening the *critical* period, as well as abridging the whole term of treatment. A tabular report of the cases is appended to the paper, and shows results as follows:—

Perfect success	80 per cent.
Partial success	10 „
Failure	10 „

(We hear from American sources that there can be no question about the success which attends the corneal suture in the hands of Dr. Williams himself; but that most other operators have found the difficulties of its application to be so considerable that they have been deterred from perseverance in their attempts. It is inserted by Dr. Williams at the summit of the flap, by means of a very short needle and an ingenious needle-holder, both specially devised for the purpose. The table shows that,

in the cases above referred to, the suture has been removed as early as the sixth, and as late as the thirty-fifth day.)

TUMOUR OF EYEBALL SIMULATING GLAUCOMA.

Dr. Morton, of Philadelphia ("Trans. of Amer. Ophth. Soc.," 1869), mentions an instance in which the symptoms caused by an intra-ocular tumour were mistaken for those of glaucoma. J. G., æt. 41, was admitted into the Wills' Ophthalmic Hospital in February, 1866, suffering from what was taken to be glaucoma. In March, 1865, he discovered accidentally that he was wholly blind of the left eye. No trouble of any kind occurred until the month of May following, when pain gradually came on, and soon became a prominent symptom, which increased to such an extent that he was obliged to give up all work. The pain was most severe at night, and the globe felt as if it would be forced out. On admission, there was complete opacity of the lens, the pupil was irregularly dilated and altered in colour, a great amount of venous congestion, extreme tension of the ball, no perception of light, and pain almost constant, referred principally to the globe and back of the head. The disease was thought to be glaucoma, and iridectomy was performed. Two weeks later, there being no relief, but rather an aggravation of the pain, the eyeball was extirpated. On making a section of the globe, a pediculated, soft, white tumour was found, which sprang from the fundus, about two lines from the optic papillæ. The tumour occupied about one half of the "posterior chamber" (*sic*) and was encephaloid in its character. The optic nerve was uninvolved. With the removal of the eyeball there was an entire relief of all pain, and no return of the disease since.

SYMPATHETIC OPHTHALMITIS.

Dr. Holmes, of Chicago ("Trans. of Amer. Ophth. Soc.," 1869), read before the Society an abstract of the history of forty-six cases of injury or disease of one eye, in fourteen of which total loss of vision in the second eye occurred from sympathetic ophthalmitis, apparently from neglect or ignorance of the physician in attendance; and in thirty-two of which extirpation was deemed necessary by Dr. Holmes to prevent the loss of the other eye. In twelve of the cases of total blindness the sympathetic inflammation occurred at periods after the primary lesion, varying in length from four and a half weeks to ten months; in one case the patient was permitted to suffer fifteen years from severe and frequent paroxysms of pain in an injured and useless eye, when the other eye became inflamed and atrophied. In one case, soon after a piece of metal had been thrown

into an eye, the second eye became inflamed and atrophied, vision being totally destroyed, and yet the subsequent removal of the foreign body was followed by quite good vision in the injured eye. Extirpation was performed in twenty-seven cases, less than six months after the primary lesion. In two cases of choroidal tumour, and in two cases in which a piece of metal had entered the globe, it was performed after the patients had suffered great pain almost constantly for two years. In one case a piece of percussion cap in an eye had failed to produce sympathetic ophthalmitis, although the injured eye was the seat of constant pain or tenderness on pressure for seven years. In a large proportion of these cases the retina was detached from the choroid and situated in the central portions of the globe, either as a solid chord or as a floating membrane, in form not unlike an umbrella partially open.

USE OF ATROPINE IN GLAUCOMA.

Dr. Haskett Derby, of Boston ("Trans. of Amer. Ophth. Soc.," 1869), records two cases of acute glaucoma, in each of which the instillation of atropine was directly followed by the outbreak of the violent symptoms—a development of disease that in the one instance had lain dormant, in the other had not even been suspected. He refers to a warning given by Mr. Wharton Jones ("Med. Times and Gaz.," vol. i, pp. 111, 112), against the use of belladonna in glaucoma, and wishes to direct the attention of ophthalmologists to the question, *whether the use of mydriatics may occasion an excess of acute glaucoma in an eye already predisposed to the same?*

The facts adduced by Dr. Derby throw little light on his problem. In the first case glaucoma had been threatened for two years, and in the second the left eye had already been destroyed by it, and the right displayed "marked venous," although, even under pressure, no arterial pulsation. In the face of clear predisposition to the disease, it seems unnecessary to regard its outbreak soon after the use of atropine as other than a mere coincidence, especially when regard is had to the known effect of the drug in diminishing tension. Dr. Derby very rightly observes, however, "So important in glaucoma are the early ophthalmoscopic symptoms, such as slight changes of level at the edge of the papilla, and particularly arterial pulsation, and so frequently does it become desirable to dilate the pupil in order satisfactorily to determine their existence, that any facts tending to show the impropriety of the use of mydriatics would have a most important practical bearing."

CASE OF ACQUIRED ASTIGMATISM.

Dr. Pomeroy ("Transactions of the American Ophthalmological Society," 1869), relates a case of acquired astigmatism. The patient, æt. 38, was an artist, and complained that for about five years objects had appeared elongated and indistinct, and that he was unable to use his eyes long at a time without pain. The difficulty was so great as to cause him to give up portrait painting. Previously to this affection he had been in the habit of taking sketches of places, and of testing their accuracy by comparing them with photographs, so he feels sure that his eyes were perfect at this time. He first noticed the difficulty after painting miniatures for some time by the aid of an imperfect convex lens. His vision was $= \frac{1}{2}$, but a - 15 cylindrical lens in the vertical meridian raised vision to 1, and enabled him to read No. 1 of Jaeger at $3\frac{1}{2}$ ". With these glasses he has worked for more than a year, sometimes using them twelve or fifteen hours a day without pain to the eyes. There is still a little dancing of the lines in Green's plates, when the head is tilted from side to side, but no more perfect correction seems to be attainable.

FLEXIBLE LACHRYMAL PROBES.

Dr. Williams, of Boston ("Trans. of the Amer. Ophth. Soc.," 1869), exhibited to the Society a set of flexible probes for the lachrymal passages. He thinks that Bowman's probes, if not bent so as precisely to correspond with the direction of the duct in the individual operated upon, often lacerate the mucous lining of the passages, causing pain and hæmorrhage, and retarding the cure by causing local inflammation. He has found in practice that his flexible probes adapt themselves to the sinuosities of the passages, can be introduced with more facility and less pain, and are less likely to take a wrong direction. They have bulbous extremities, of the sizes of Bowman's series, but are slender for one third of the distance from the bulb to the flat disc in the middle. They are of alloyed silver, and have an elastic flexibility without being liable to bend upon themselves in encountering obstructions, as would be the case if the silver were pure.

LEADEN STYLES FOR LACHRYMAL PASSAGES.

Dr. John Green, of St. Louis has contributed to the "Trans. of the Amer. Ophth. Soc.," 1869, a paper on the use of leaden styles in the treatment of disease of the lachrymal sac. He says: "Metallic styles, worn for a longer or shorter time

in the lachrymal sac and nasal duct, have long been used in the treatment of obstructions of those passages. Of modern surgeons, Dr. E. Williams of Cincinnati, has employed this method with the greatest success. He uses styles of about eight sizes, ranging from .035 to .12 inch, or from the size of No. 3 of Mr. Bowman's series to a diameter of about double that of No. 6. The styles are of silver, and are introduced through an opening into the lachrymal sac made by slitting up the upper canaliculus with a fine pair of scissors. He begins with a style as large as can easily be inserted, changing to larger sizes as fast as the state of the parts will permit. During the whole course of the treatment the style is frequently removed, and the sac and duct treated by astringent injections. The results are extremely satisfactory, both as regards the time required and the ease and certainty with which the case is conducted to a successful issue, and the method is especially adapted for the worst forms of obstruction, such as traumatic or complicated cases. Experience has shewn, however, that it is necessary to use styles of large diameter, in order to guard against relapse. This seems to arise in part from the silver styles being too rigid to accommodate themselves to the direction of the duct, so that they exert unequal pressure on its bony walls. The style, instead of lying loosely in the middle of the canal, is, in fact, making constant pressure upon a few points, so that it tends to produce ulceration of the lining membrane, and partial absorption and ultimate change of form of the bony walls. The canal must, in short, be brought into the form of a strictly cylindrical tube before the style can begin to distend it uniformly, and to exert that equable pressure upon the mucous membrane that is essential to its beneficial action. Reflecting upon the mode in which the curative effect of the styles was attained, the writer was led to the conclusion that the period of treatment might be materially abridged, with increased comfort to the patient, by the substitution of flexible styles of lead for the rigid ones of silver. The experiment was tried upon a very unpromising traumatic case, complicated with abscess of the sac, and with a result so gratifying as to lead to other trials which have all proved highly satisfactory. The apparent advantages of the method are briefly these:—

1. The leaden styles with the maximum degree of comfort, and with the minimum degree of risk from unequal pressure.

2. Under their use the discharge from the sac soon becomes mucous and rapidly disappears, without medication of the sac by syringing or otherwise.

3. A less degree of dilatation, by the use of a smaller size of style, answers for the completion of the cure, thus enabling us materially to abridge the period of treatment.

4. The toleration of the style and the favourable progress of

the cure, without further treatment, enable us, in certain cases, to dispense with the assiduous attention which is so essential with other methods. The plan works particularly well, therefore, in cases, where patients are irregular in attendance, and where, for any reason, but a short time can be spared for treatment.

The styles used have been made from the purest and softest lead drawn into wire, of sizes ranging from one to two millimetres ($\frac{3}{4}$ th to $\frac{1}{2}$ th of an inch) in diameter. These sizes correspond in the lower numbers to Nos. 4 to 6 of Mr. Bowman's probes. In the larger sizes the maximum (No. 6) of Mr. Bowman in the ratio of 2 to 1.3. They are smaller than the maximum sizes used by Dr. Williams, in the ratio of 2 to 2.9; and they are probably smaller also than the largest styles which he commonly employs. Larger sizes, ranging from two to three millimetres in diameter, have not as yet seemed to be needed.

To make the styles from the leaden wire, it is cut into lengths of two inches for the upper canaliculus; if intended to be passed by the way of the lower canaliculus, they should be about a quarter of an inch shorter. One end of the style is carefully rounded with a penknife, and smoothed by scraping. They are made perfectly straight, as they are more easily introduced in this form; the upper end is bent over into a hooked form by means of forceps, after the style is placed in position. The smaller sizes are introduced with great difficulty, unless a way has been prepared for them by wearing a rigid style of silver for a few hours, or perhaps for a day or two. After this there is no further trouble in exchanging the old style for the next larger, provided only that we take care to introduce the new one immediately upon the withdrawal of the old. The largest sizes (of from two to three millimetres in diameter) if used, will be found rather heavy, they should therefore be drawn in the form of tubes, instead of solid wire. The smaller sizes might also perhaps be made tubular, and their introduction facilitated by passing a fine steel wire into the cavity. Where elegance is an object, the styles may be easily silvered or gilt.

CURE OF SEVERE NYSTAGMUS BY DIVISION OF MUSCLES.

Fano ("Union Medicale," 15th September, 1868), describes a case of severe nystagmus. The patient, a man *æt.* 27, and employed on the Railroad de l'Ouest, was struck on the right shoulder by the buffer of a waggon on the 20th of March. The blow produced a dislocation of the arm, which the patient reduced himself. From this time his vision began to suffer, and he came to Fano on the 18th of April. He complained that he could not read more than one line of a printed page without being

compelled to stop, because the characters became obscure and the words appeared to be joined together. The acuteness of vision had not suffered. On directing the patient to look straight before him, both his eyes were seen to be in constant oscillatory movements of two kinds, the first being to and fro, from within outwards and from without inwards, the second consisting of movements of the globes about their antero-posterior axes. These two kinds of movements succeeded each other in a rythmical manner, but never happened together, so that there would be first a lateral and then a rotatory movement—both eyes always performing the same at the same moment. An ointment with valerian was rubbed into the orbit, and later the pills of Miglin were administered, but without any favourable result.

On the 15th of June, the internal rectus of the left eye was divided in its muscular portion, and the eye immediately deviated outwards. The patient was ordered to apply cold compresses over the eyelids, and in order to prevent too pronounced a divergent strabismus, to look as much as possible towards the right whenever the eyes were opened during the renewal of the dressing.

On the 19th the lateral movement was less apparent than before when the patient looked straight before him, but was conspicuous when he looked to the left. The left eye remained divergent, and the efforts of the patient could scarcely bring it to the inner side of the median line of the orbit. On the 20th the nystagmus of the left eye was manifestly less, and during the following days it diminished more and more. On the 24th the external rectus of the right eye was divided in its tendinous portion. The operation was followed by a deviation of this eye inwards, to such a degree that the optic axes, divergent after the first operation, were again rendered convergent when the patient looked forwards. On the following day the nystagmus had disappeared, and the lateral movements were only seen when the patient looked to the extreme left or right. On the 27th he read, without stopping, six lines of No. 7 of Jaeger's types. On the 4th of July there was no longer any strabismus, whatever was the direction of the eyes, and the nystagmus had almost entirely disappeared. The patient could read the whole of a small daily newspaper without stopping.

On the 25th of August the cure remained complete. There was no strabismus, the ocular movements were perfect, and although there was still a slight oscillation about the antero-posterior axis, this disappeared during reading, which was attended with no difficulty.

CASES OF INJURY TO THE EYE.

Dr. H. Wagner, of Odessa, records the following cases ("Klinische Monatsblätter," Jan., 1869)—

1. A schoolmaster, æt. 31, had been wounded in the left eye by the discharge of a gun five years previously. In the lens of this eye, close behind the capsule, could be seen a rust brown body, partly concealed by yellowish brown cataractous masses, which formed a sort of halo round the foreign substance. The marginal parts of the lens were perfectly clear. An iridectomy restored good vision, the other eye being amblyopic. Two years and a half after the operation the opacity of the lens had certainly increased, but the marginal parts were still transparent, and the vision was one-fourth of the normal.

2. In an officer who had sustained an injury to the right eye four weeks previously, said to be from a blow on the temples, and in whom the consequent inflammation had already been reduced by frequent blood-letting, there was a small scar in the inner and upper quarter of the cornea, and corresponding to it a circular hole in the iris. In the lens, near to the posterior capsule, a roundish, black substance, scarcely a millimetre in diameter. In the anterior capsule no scar was visible. There was no opacity of the lens, but shreds of flocculi in the vitreous, and vision was only $\frac{1}{30}$. After six months there was still no trace of opacity of the lens, not even in the vicinity of the foreign body. The flocculi in the vitreous had diminished, and vision had increased to $\frac{1}{8}$ rd.

3. In a very feeble woman, æt. 43, who had lost the sight of her right eye two years before by falling into a canal, the form of the eyeball was normal, and the lower and outer quarter of the cornea presented a leucomatous scar. The only trace of the iris was a triangular shred at the upper and inner part; its point united with the scar. There were numerous particles in the vitreous body, but no visible change in the fundus oculi, so that the extreme amblyopia was not explained.

4. A boy, æt. 10, who received a blow on the left eye from an arrow, having a ball of pitch at its head, presented a rupture of the sclerotic by *contrecoup*. The outer half of the lower lid was ecchymosed; and on the upper and inner scleral quadrant there was a wound three millimetres in length, close to the corneal margin. It gaped but little, and choroidal pigment and some vitreous substance projected between its smooth margins. The vitreous was diffusely turbid, but there was no intra-ocular bleeding, and no displacement of the lens. Atropine and a light compressive bandage were applied. In two months the vitreous had so far cleared that the patient could read medium print, and the field of vision was normal. He was then lost sight of.

BINOCULAR DIPLOPIA AFTER CONCUSSION.

Romanelli ("Il Morgagni," 1868), records a case of binocular diplopia in a soldier, who suffered from symptoms of concussion

of the brain in the second degree, in consequence of a wound on the occiput, and a fracture of the temporal bone. In the third week, after subsidence of the more severe symptoms, the patient could only see an object singly at a distance of a few centimetres from the eyes; when it was removed further, double vision occurred, and the horizontal separation of the images increased with the distance of the object. Romanelli attributed the phenomena to some central lesion.

ON CHANGES IN ASTIGMATISM UNDER THE INFLUENCE OF
ACCOMMODATION.

By Dr. Dobrowsky, of St. Petersburg (Arch. f. Ophth. xiv, 3).

The author shows, partly by fully detailed cases of astigmatism, and partly by experiments on eyes rendered artificially astigmatic by cylindrical glasses, the influence of the ciliary muscle upon the defect. He arrives at the following results :—

1. Astigmatism may be completely corrected by unequal spasmodic contraction of the muscle of accommodation. Hence, it happens that astigmatics do not so much complain of seeing badly, as that they can see clearly for only a short time. They do not see the object in dispersion circles, as would be the case according to the theory of astigmatism, but tire easily, exactly like hypermetropics, who also can for a time overcome their optical defect in near vision by an effort of accommodation. In such persons the astigmatism cannot be detected prior to the instillation of atropine, and the regular myopic astigmatism is, for near vision, a less favourable anomaly than simple short-sightedness, but is, on the contrary, less injurious to distant vision, being capable of correction by accommodation. Inversely, in hypermetropic astigmatism near vision is better, and distant vision worse, than in a simple hypermetropic eye.

2. In consequence of unequal contraction of the ciliary muscle, and irregular curvature of the lens, the astigmatism may be partially but not entirely corrected. This happens chiefly in persons enfeebled by long illness, or tired by prolonged exertion of the eyes.

3. By effort and spasm of accommodation it is possible that astigmatism may be increased. Here, also, it is evident that the actual grade cannot be correctly estimated until the ciliary muscle has been paralysed by atropine. Such patients, when the spasm is relieved, require to change their glasses.

4. By contraction of the ciliary muscle the hypermetropic eye may be so modified as to become apparently short-sighted in one or both meridians. By depletion and the continued use of atropine the spasm may be relieved, and the improper employment of concave glasses may be dispensed with.

5. By irregular spasm of the accommodation eyes that are symmetrical, and either emmetropic, hypermetropic, or myopic, may be made to appear astigmatic.

6. In all cases of astigmatism it is necessary to paralyse the accommodation before deciding whether the defect, or its degree and kind, depend upon the formation of the eyeball, or, partly or wholly, upon some abnormal state of accommodation. It is also possible that other anomalies of refraction may be only apparent, and may be shown by atropine to be astigmatism.

ON THE DIAGNOSIS OF LATENT HYPERMETROPIA.

By Dr. R. Berlin (Klin. Monatsbl., Jan., 1869).

Although the degree of latent hypermetropia may be determined with absolute certainty by the use of atropine, yet the disadvantages of this agent render surgeons unwilling to employ it. The author has observed that latent hypermetropia is rendered manifest when the eyes are brought into parallelism by a pair of abducting prisms. The reasons fully stated in the original, a prism of 6° for each eye is the most desirable. It is necessary first to determine with convex $\frac{1}{10}$ the binocular far point, and then to place before each lens a prism with its refracting angle outwards. The object is then moved farther away, until the details become indistinct. The best object is print of middle size; and its removal beyond the far point, when latent hypermetropia is present, may be carried to 3, 6, 8, or even 12 inches. If there be no latent H, vision beyond the far point is not improved by the prisms. The author promises farther observations upon the subject.

ENTROPIUM WITH NARROWNESS OF PALPEBRAL FISSURE.

Thiry ("Presse Médicale," 1869,) relates two cases of entropium, produced by the combined effect of contraction of the orbicularis and congenital narrowness of the palpebral fissure. The first case was that of a woman, twenty-five years old, who, at the age of fourteen, suffered from inversion of the eyelashes, and since then from repeated attacks of ophthalmia, which, partly through photophobia, partly through corneal opacities, had impaired the sight more and more. On admission both palpebral fissures were much contracted, especially the right; the margins of all four lids were rolled inwards, there was great irritation of the eyeball by the lashes, kerato-conjunctivitis of both eyes, with chemosis of the right; the corneæ turbid, uneven, covered with small epithelial ulcers, and with serous effusions between the lamellæ; continued lachrymation, and photophobia. The external angle of each eye was extended by

incision some twelve or fifteen millimetres; and from this the orbicularis was divided subcutaneously, in all four lids, from the outer to the inner angle. The lids could then be brought into proper position. The margins at the outer angle were separated by pieces of lint, and the upper lids were held up by compresses. In three weeks healing was complete. The left eye was perfectly well, its cornea bright, the movements of the lids easy and regular; but in the right eye the upper lid still required to be freed from some increased eyelashes, and some fasciculi of muscle to be again divided. Complete cure was effected in six months. The second patient, a woman *æt.* 36, had suffered from earliest childhood from irritation of the eyes. Repeated attacks of inflammation had produced a condition resembling that of the case last described, except that the corneæ had suffered less as regards their transparency. The same operation was performed, and the lids were retained for a fortnight in their proper position by a suitable dressing. The hypertrophy of the conjunctiva was subdued by nitrate of silver, and a complete cure was obtained in eight weeks.

ON THE TREATMENT OF DISEASES OF THE LACHRYMAL DUCT.

By Prof. Ferd. Arlt (Archiv. f. Ophth., xiv, 3).

In this paper the distinguished Vienna Professor gives a minute and detailed account of Mr. Bowman's method of using probes for dilatation, and expresses the belief that this method is sufficient to effect a cure in most cases. Where it fails to do so he incises and cauterises the sac, in preference to using any means to obtain a greater degree of dilatation than Bowman's probes will afford. He even states that the dilatation produced by number 5 or 6 is neither necessary nor free from danger; and he grounds this statement on the fact that a portion of the canaliculus must always remain undivided, and that the natural calibre of this portion will not admit a larger size than No. 4 without injury to its epithelium or even laceration of its wall. The effect of such injury or laceration is to produce contraction, or even adhesion, as healing occurs, so that the canaliculus that freely admitted No. 6 becomes after a while totally impervious.

THE HISTOLOGY OF TRACHOMA.

By Dr. Wolfring, of Warsaw (Arch. f. Ophth. xiv, 3).

The author first gives an account of the structure of the normal conjunctiva, on which his views differ in many points from those of other authors.

The so-called papillæ are not formations analogous to the actual papillæ, such as are seen in the mucous membrane of the mouth, but are produced by the tarsal conjunctiva, being marked in all directions by grooved channels, or being irregularly folded. In the furrows thus formed there are numerous depressions, which may be regarded as tubular prolongations of the mucous membrane. At the margins of the lids, where the thin conjunctiva is very closely adherent to the tarsus, these furrows are very numerous and very shallow; upon the tarsus they are less numerous, but deeper; and at the point of reflection they pass gradually into those deeper furrows which are characteristic of the appearance of the conjunctiva of the sac. The elevations enclosed between the furrows form, therefore, the papillæ; and these, which are scarcely perceptible at the free margins of the lids, are more evident towards the angles of the eyes and towards the reflection of the conjunctiva. In new born infants and children the grooves and elevations are very little developed, and their common presence in adults is probably due to the circumstance that the conjunctiva, where it possesses a looser tissue, and is less firmly united with the tarsus, is more at liberty to swell. From the texture of the tarsal cartilages brush-like prolongations of tissue pass into the above described elevations. The vascular capillary network, as well as at the bottoms of the furrows as at the tops of the elevations, is "apparently" equally distributed and arranged; yet the author only half concedes the appellation "papillæ" when he declares that every elevation must have its proper arterial branch, but in such a way that its capillary net communicates uninterruptedly with that of the furrows.

The epithelium of the conjunctiva is described by the author as cylindrical epithelium, which, in its most superficial layers, has received a flattened form from pressure. The deep layers possess none but round cells. The cylinder form is least recognizable in the furrows and in the folds of reflection. The cylindrical cells are so quickly shed that they can only be studied in perfectly fresh preparations; and hence this layer has been overlooked by many observers.

The blood-vessels proceed from the external and internal palpebral arteries, which, increased by branches from the temporal and zygomatic regions and the cheeks, form the superior and inferior palpebral arches. The arch of the lower lid courses near its lower margin, that of the upper lid one or two millimetres from its free margin. The latter, however, gives off a branch at each angle of the lid, which meet to form another arch immediately along the convex margin of the tarsus. These vascular arches, and their principal branches, lie near the cutaneous surface of the lids; and from the principal branches proceed, besides those to the skin and the muscles, twigs to the glands

of the tarsus, and others that perforate the cartilage to reach the conjunctiva, and particularly its papillary elevations. The twigs are thicker the nearer they are to the convex margin of tarsus. The capillaries of the conjunctiva, together with those of the posterior surfaces of the tarsal glands, unite to form a close network of fine veins, which lies between the cartilage and the conjunctiva. This network discharges its blood into branches lying parallel with the meibonian glands, and proceeding to the convex margin of the cartilage, where they unite to form two arches, which correspond to the second arterial arch of the upper lid, and to the single arterial arch of the lower lid.

The pathological changes of the conjunctiva are not specifically different forms of disease, but depend upon essentially similar processes, that proceed step by step from overfilling of the vessels to œdematous swelling, to infiltration of the tissues with elements of lymph, to increased secretion from the mucous surface and its glands. The author uses here almost the same words as Stellwag, without, however, quoting him; and employs also his names for the different forms of trachoma. He has proved experimentally upon animals that in simple catarrhal inflammation the white corpuscles of the blood escape into the conjunctival tissue, and are ultimately discharged with the swollen epithelium in the form of pus cells. If the inflammation be more severe, and of longer continuance, the vessels become hypertrophied, and the conjunctival tissue is converted into an adenoid structure by deposit of lymphatic bodies. In papillary trachoma the papillæ become actual swellings, the lymphoid cells in which make them appear like the solitary follicles of the intestinal canal. In mixed trachoma these roundish collections of lymphoid bodies are still more increased, and enclosed between the coalesced papillæ. The largest trachomatous granules are found near the deeper margins of the cartilages, but they are in no way distinguishable, except by the accumulation of their elements and their greater elevation, from those that are scarcely visible to the naked eye. Generally the granules appear first to come into existence when the most acute stage of inflammatory hyperæmia has passed away. It is well known, also, that when the swelling and redness have entirely disappeared, the infiltrated spots become visible as yellowish granules, which may continue unchanged for years, even when the rest of the conjunctiva has become completely normal.

Different from this is the bladder-like trachoma granules, which, when punctured, give exit to a little fluid containing lymph corpuscles, and collapse. These become developed as it appears, primarily, or as a consequence of hyperæmia of a single vascular twig, which may very well pass unobserved by the patient. In these cases there is probably some especial predis-

position. Such granulations may either quickly disappear, or they may themselves become sources of irritation, or they may give rise to swelling of the papillæ, and to the other forms of trachoma. They are distinguished from the harder forms of trachoma granules not only by their position immediately beneath the epithelium, but by containing serous or gelatinous fluid, in which lymphoid elements are mingled only in small proportion.

The fully formed trachoma granules or follicles are usually, but not always, separated from the surrounding textures by some concentric layers of connective tissue. They are surrounded by larger vessels, especially on their tarsal aspect, but their interior is only sparsely penetrated by capillaries.

Whether these granules, when fully formed, become connected with the lymphatic vessels, the author has not been able to determine, since he has not succeeded in injecting the lymphatic vessels of the human eye. In dogs, however, in which trachoma is regularly present on the inner surface of the nictitating membrane, each granule is clearly surrounded by lymphatic vessels, and since the similar formations in the intestinal canal are certainly in relation with the lymphatic system, it may reasonably be believed that in trachoma of the human eye, a similar communication must exist.

UNUSUAL TOLERATION BY THE CORNEA OF THE PRESENCE OF A FOREIGN BODY.

Dr. Voytits ("Wien. Med. Presse," 1868), describes the following curious case:—

A strong healthy boy fell with his face upon a thistle and, besides some slight grazing of the skin, received an injury to his left eye, which he kept half closed. Examination discovered a thin straw-yellow spine, a millimetre and a half in length, from the calyx of *carduus benedictus*, stretching by its base in the outer and lower margin of the cornea, while the point was in the anterior chamber, and directed obliquely upwards and inwards towards the pupil, but without touching the anterior capsule. Beyond slight injection of the conjunctiva, and somewhat increased secretion of tears, there were no symptoms of irritation, and, as the foreign body did not project externally above the corneal surface, and the parents objected to an operation, no attempt was made to remove it. Grey ointment, with extract of belladonna, was ordered to be rubbed into the parts around the eye. Eight days later there was very slight injection of the ciliary region, and very slight greyish turbidity of the cornea immediately around the foreign body. After five or six weeks, when the patient was seen again, no trace of the spine could be discovered, and, according to the statements of the parents, the point had fallen into the anterior chamber after maceration of the

portion imbedded in the corneal tissue. There was a scarcely perceptible opacity, but this, being external to the region of the pupil, produced no effect on vision.

ON THE THEORY OF GLAUCOMA.

By Drs. Magni and Stilling.

Magni ("Rivista Clinica," 1865), and Mazzei (Ibid., 1867), oppose the German theory of glaucoma and propound another. According to the German school, glaucoma is due to an increase of the intra-ocular fluid by exudation from the choroid. The authors object that such exudation, when it occurs posterior to the ora serrata, leads to separation of the retina and to atrophy of the eyeball, but not to glaucoma. If the process be referred to the ciliary region, or, in other words, to cyclitis, we have fresh difficulties arising from the differences between the symptoms of the two diseases. Thus:—

In Glaucoma.

The convexity of the cornea is diminished.
 The iris is atrophied.
 The diameter of the eyeball shortened.
 The size of the ocular chambers diminished.
 The coats of the eyeball thickened.
 The crystalline lens diminished.
 The ciliary processes atrophied.
 The vitreous condensed, firm.
 The papilla excavated.
 The ciliary nerves atrophied.

In Cyclitis.

Increased.
 Hyperæmic.
 Lengthened.
 Increased.
 Thinned.
 Normal or enlarged.
 Hyperæmic.
 Fluid, almost watery.
 Normal.
 Normal.

In the presence of these differences it is scarcely possible to assume a similar pathogenesis for the two diseases, which resemble each other only in the single point that in both there is a venous stasis in the retina.

The tension of the ocular capsule in glaucoma is explained by Magni as a result of its contraction (*stipamento*), from which it follows that the intra-ocular fluids must be diminished, and that the vitreous humour must be condensed by loss of its serum. Moreover, the atrophy of the ciliary body, on which the normal quantity of the intra-ocular fluid depends, permits a decrease of this fluid to be expected.

According to v. Graefe's theory, the excavation of the papilla is due to the pressure of the increased fluid upon the lamina cribrosa. This texture, according to Magni, is neither elastic nor extensible, and has a more considerable thickness than that of the fibrous capsule of the globe itself. Why is there no excavation in pronounced hydrophthalmus? An excavation from pressure must necessarily have the form of the letter U or V; while in glaucoma, according to Magni, the papilla assumes the form of a truncated cone, with its smaller extremity directed towards the vitreous.

Magni believes that atrophy of the ciliary nerves affords a complete and sufficient explanation of the course and the changes of glaucoma. By such atrophy the secretory function of the vascular membranes of the eye is diminished, and in the degree that this diminution occurs, and that the vitreous becomes more dense and less bulky, the sclerotic must contract to follow the diminution of its contents. In this way the sclerotico-choroidal foramen, that embraces the optic nerve, becomes much shrunken and drawn in, especially at its inner portion, by which the peculiar form of the glaucomatous papilla is fully explained.

According to Magni, therefore, glaucoma is a chronic disease, depending upon gradual atrophy of the ciliary nerves. The acute glaucoma of v. Graefe is only an already existing glaucoma, complicated by acute choroiditis. The excavation is always accompanied by atrophy of the nerve; and it is difficult to conceive how an inflammation could render the nerve atrophic in a few hours, if it had not been so before. Moreover, there are many cases of acute serous choroiditis without excavation, in which the symptoms in no way differ from those of the cases in which excavation is present. The iridectomy may relieve both the choroiditis and the glaucoma; but since we have as yet only ingenious hypotheses by which to account for its action, the results of treatment cannot afford any test of the correctness of the theory.

Dr. Stilling, of Cassel ("Arch. f. Ophth.," xiv., 3), attributes the occurrence of glaucoma to an inflammation of the vitreous of a serous character. He does not see how the pus elements in the vitreous can be derived from the stroma cells of the choroid, or the increase of the fluid of the vitreous from a serous choroiditis. It is necessary to assume two forms of plaster, and two of serous choroiditis; the products of one form penetrating through the retina and hyaloid, the other leading to detachment of the retina. As positive evidence of the possibility of inflammation of the vitreous body, Stilling advances new facts with regard to its membranous structure. He repudiates the idea that it is a formless mucous mass inclosed in a structureless membrane: and by a special mode of preparation with a solution of carmine he has obtained evidence, to the naked eye, of a

fibro-membranous scaffolding in the fresh eyes of mammalia. The somewhat eccentric canal that passes through the vitreous from the papilla to the posterior surface of the lens, may be easily rendered visible in the eye of a pig. The vitreous and lens being lifted together from the eye, the lens removed, and the vitreous turned over in sufficient water to immerse it to half its height, a drop of carmine solution must be placed in the clearly visible funnel-shaped space at the posterior pole. The canal will sometimes fill itself immediately up to the anterior pole, although at other times the vitreous must be somewhat turned and moved before the experiment will succeed. If more water be then added, and the whole vitreous allowed to float, the reddened canal will be clearly visible through the transparent parts around it. It is possible that the projection forwards of the lens, and the excavation of the papilla in glaucoma may be due to this canal being overfilled with fluid.

GUNSHOT WOUND OF THE ORBIT.

M. Worms ("Gaz. des Hôp.," 1868,) relates the case of a young man to whom he was called at half-past eleven in the morning. The night before, about midnight, the patient had gone to his bedroom under the influence of wine, and had discharged a pistol at his own head. He remembered only vaguely what had happened afterwards, but believed that he went to bed and slept until morning. He awoke covered with blood, and called for assistance.

M. Worms found a bullet wound, a centimetre and a half in diameter, two centimetres external to the outer margin of the orbit, and in the line of the superciliary ridge. The margins of the wound were slightly swollen, and were blackened by powder, and the outer portion of the eyebrow was burnt. The face, neck, and ear were covered by blood, which had also entered the ear of the other side; but a careful examination showed that this bleeding was only what had flowed from the external wound. A probe, carefully introduced into the wound, passed for six centimetres in a direction perfectly horizontal, but oblique from before backwards, in such a way that its prolongation would have reached the opposite side in the axis of the mastoid process. The probe admitted of a little lateral movement, and the exploration revealed the following conditions:—At a depth of two centimetres the probe discovered a cavity of denuded bone, and by tracing its margin showed its form to be nearly circular. Deeper still, at four centimetres from the surface, there was a little fragment of bone, to the right and left of which the probe could pass. Lastly, at the bottom of the wound there was a moveable foreign body. This was of the

bulk of a small leaden bullet; but, instead of being spherical, it presented on the side towards the wound a sort of longitudinal crest, with a little groove along its base. This foreign body was easily extracted by dressing forceps, and was found to be a pistol bullet weighing 750 grains, and 1·2 millimetres in diameter. It was flattened at one of its poles, and presented at its outer surface a gaping fissure, as if an attempt had been made to divide it with a strong knife. The extraction was followed by no symptoms of inflammation, no cerebral or ocular disturbance, and no ecchymosis under the sclerotic. Ophthalmoscopic examination showed no changes, and the movements of the pupil and of the eye were unaffected, except for a very slight impairment of the action of the superior rectus, so that the extreme rotation upwards was about two millimetres less than on the other side. A small degree of inconvenience on opening the mouth, probably caused by a laceration of the temporal muscle, was the only evident effect of the injury. The healing of the wound was retarded by an attack of erysipelalous inflammation, and by the escape of fragments of bone, but cure eventually took place.

NOTES OF VARIOUS OPHTHALMIC CASES.

(By Jonathan Hutchinson. "*Medical Mirror*," Sep. 1, 1869.)

Case 1.—Retinitis Pigmentosa. History of many Relations affected in the same manner.

Case 2.—Pain in the Ear and in the Teeth, caused by an inflamed Eye.

Case 3.—Syphilitic Paresis of Certain Branches of the Third Nerve, inducing Loss of Accommodation, &c.

Case 4.—Insidious Glaucoma at an Early Age in a Patient who had never Menstruated, and in whom other peculiarities existed. Premature senility.

Case 5.—Double Neuritis, preceded by severe and persistent Neuralgia in Left Side of Face.

We record the headings of these cases, in order to supply means of reference to any interested in the subjects which they illustrate.

A CASE OF NIGHT BLINDNESS FROM WORMS IN THE INTESTINAL CANAL (?)

Dr. Leedom, of Plymouth, U.S., records a case under this title in the "*American Journal of Medical Sciences*;" but, as is usually the fact, the details are too scanty to carry conviction to most.

A boy of seven years of age was able to go to school, and could see well during the daytime: but as soon as night came his eyesight failed, so that he could not discern objects. He would run against tables, chairs, and other things, and that it was dangerous for him to move about, and his father was afraid that the boy would become totally blind. The boy was sturdy and robust; his eyes presented no peculiarity. When taken to the window, possibly the pupils did not contract quite so much as they should have done. An anthelmintic was ordered him, as he was said to be troubled with worms. A great number, some of them of large size, were discharged, and afterwards his eyesight became quite restored.

A BINOCULAR STRABISMOMETER.

M. Bécларd has presented to the Academy of Medicine of Paris a very ingenious and simple little instrument, invented by Dr. Galezowski, a binocular strabometre. It is composed of a horizontal branch, upon which slide two needles, destined to indicate the degrees, and which are placed opposite to the centre of each corresponding cornea. The bar is held by a handle on a level with the eyelids, and the middle resting on the root of the nose. By turning buttons at either end of the bar, the needles are moved to and fro till they correspond with the centres of the pupils. Any deviation during squinting can then easily be read off.

HERPES FRONTALIS.

(By J. B. Scriven, Principal, Lahore Medical School. "*Indian Med. Gazette*," July 1, 1869.)

This case was an extensive one, and presented several points of interest.

The eruption affected the side and tip of the nose, but the eye was only slightly inflamed; only a single phlyctenule occurred on the conjunctiva, and the cornea was slightly hazy.

There were some vesicles on the cheek and upper lip, showing that the second division of the fifth was implicated.

Two or three vesicles occurred on the lower lip, from a similar affection of the third division of this nerve.

The pain which followed the healing of the eruption was slight in this instance.

The eruption was preceded by "severe frontal headache" for a few days, and the headache followed several nocturnal attacks of fever.

HERPES FRONTALIS.

(By Assistant-Surgeon F. M. Mackenzie. "Indian Medical Gazette," August 2, 1869.)

A man cook, æt. 50, showed scars of a severe eruption of herpes frontalis on the right side of his forehead, extending from the root of his nose to the scalp.

None transgressed the median line.

There were no scars on the side of the nose.

There were a few scars on the side of the temple.

The attack of herpes occurred *thirty-three years before*; it was preceded for three months by severe pain in the right side of his head.

He had recovered from an attack of fever just before the pain came on.

The scars were slightly painful for some time after the eruption healed.

FOREIGN BODY LEFT IN THE EYE.

In the western "Journal of Medicine," August, 1869, Dr. Wright relates a case in which a small chip of stone remained in the left eye of a man for eighteen years. After the immediate symptoms had gone off, the foreign body gave no trouble for fifteen years; repeated attacks of inflammation then came on, the vision remaining "tolerably good," and ended in extensive corneo-sclerotic staphyloma, with intense pain and loss of vision. An incision through the sclerotic staphyloma gave exit to the shrivelled lens, but no foreign body was found; the eyeball shrunk considerably, and formed a good stump for an artificial eye. Dr. Wright considered the eye too much inflamed for extirpation when the man applied to him.

SCLEROTITIS IN CONNEXION WITH AN ACHING TOOTH.

The same surgeon gives a case of circumscribed scleratitis at the outer part of the right eye, accompanied by some aching in the second molar tooth on the same side. Extraction of the tooth was followed by rapid subsidence of the inflammation in the sclerotic; other treatment had no effect till the tooth was removed.

A NEW TEST FOR MIXED ASTIGMATISM.

Mr. Couper describes in the "Medical Times," January 30th, a new test for mixed astigmatism. It consists in seeing—1st, an erect, and 2nd, an inverted image, by making the eye move vertically or horizontally.

CHROMATOSCOPY.

Dr. Wolfe has an article in "The Lancet," February 13th, 1869, giving his clinical experience of the diagnostic value of colour tests in various affections of the *retina*.

In *atrophy of the papilla* the patients at first lose the power of distinguishing the *feeble tints* of various colours ; at later stages they become more or less unable to distinguish the principal colours ; *red*, especially, appears *grey*, and *green* seems to be *black*.

In "*alcoholic amblyopia*, when the ophthalmoscopic examination gives a negative result," there is a tendency for any colour impression to remain for some time after the eye has been removed from the coloured object, so that a patient after looking at *green* will be unable to distinguish *red* or *orange*, unless he closes his eyes for a few seconds between the two attempts.

It is said that when chromatic perversion exists in cases of *apoplexy of the retina*, it indicates that the deep layers of the retina (especially the rods and cones) are involved.

Dr. Wolfe thinks that chromatscopy will be especially valuable in cases of *syphilitic choroiditis* with *turbid vitreous*, when it is impossible to diagnose by the ophthalmoscope, whether the *retina* is diseased or not.

If the retina remains unaffected the amblyopia is simply one of degree, and the perception of colours is not impaired, but disease of the retina is always accompanied by impairment of the "chromatic faculty." This, if true, would seem a valuable means of diagnosis.

Dr. Galezowski, who has recently published a book on the subject, localizes the power of distinguishing colours in the *cones*, and he regards each cone as a prism, which produces at its base a concentric circular spectrum by decomposing the ray of white light impinging on its summit. Each zone of colour will impress a separate part of the cone, and as with white light, all the zones will be impressed, the result will be a perception of white light. Dr. Wolfe gives us no further explanation than the above, of the cause of imperfect perception of certain colours by some retinae. Are we to suppose that colour-blindness is due to an inequality in the perceptive powers of different belts of the cones, whereby some colour of the zonular spectrum is not perceived?

February 20.—Mr. Carter notices Galezowski's book on Chromatscopy, and objects to the concentric spectrum, because the *bases* (not the *apices*) of the cones are directed towards the centre of the eye.

HEALTHY CHILDREN OF A MOTHER AFFECTED WITH HEREDITARY SYPHILIS.

(By Dr. Charteris. "*Lancet*," January 30th, 1869.)

The woman, *æt.* 30, had three children; the two eldest were living and healthy, the youngest died during dentition.

The mother had characteristically notched teeth, set angularly to each other, and sunken bridge of nose. She had had double keratitis for six years, the disease being subject to relapses. She presented no signs of struma. She was the elder of two. Her parents were alive.

DIVERGENT STRABISMUS AFTER DIVISION OF INTERNAL RECTI—
OPERATION.

Mr. Hulme operated on a case of divergent squint, resulting from previous division of both internal recti.

He divided the left external rectus and brought forward the internal rectus at one operation; subsequently he divided the right external rectus and brought forward the internal muscle, as before, but owing to the previous extreme shortening of the external muscle in this eye, all power of eversion was lost after its division. The tendon was subsequently brought forwards at a third operation, and she obtained in this way good power of eversion and inversion with each eye, but there is a very slight *internal* squint of the right eye; she has, however, binocular vision and no diplopia.—"*Lancet*," June 12, 1869.

ELECTRIZATION OF PARALYZED MUSCLES IN STRABISMUS.

(By R. B. Carter. "*Lancet*," January 2nd, 1869.)

Two cases are recorded in which a paralyzed rectus was completely restored to power by the primary induced current passed through small reophores applied to the conjunctiva immediately over the affected muscle.

The first was paralysis of the superior rectus without assignable cause, accompanied by diplopia. The inferior rectus was divided after a few days' use of the current to the superior rectus, and the electrization continued. The deformity and the diplopia were cured.

The second was an extreme convergent strabismus from hypermetropia, with amblyopia of the squinting eye. The internal rectus was divided freely with little benefit; but power was restored to the external rectus by subsequent use of elec-

tricity in the same way as in the former instance. The squint was entirely removed.

CARBOLIC ACID IN CONJUNCTIVITIS.

Dr. C. F. J. Lehlbach has used carbolic acid in some cases of conjunctivitis, purulent, acute, and chronic. He thinks there is no local application which can be compared with it in this disease.

FOREIGN BODY PRESENT IN THE EYEBALL FOR A LONG TIME, AND ULTIMATELY REQUIRING EXCISION.

At the Pathological Society, January 19th, 1869, Mr. Spencer Watson showed a wasted eyeball, which he had excised. It had contained a shot for twenty-four years; bony deposit had occurred recently, and probably had caused the sympathetic ophthalmia which necessitated excision.

THE OPHTHALMOSCOPIC DIAGNOSIS OF TUBERCULAR MENINGITIS.

Dr. Clifford Allbutt, in two articles ("Lancet," May 1st and 8th, 1869), shows that many cases of fatal tubercular meningitis are accompanied by changes readily appreciable by the ophthalmoscope, viz., congestion of the disc, and hyperæmia of the retinal vessels, followed by ischæmia of the papilla, and sometimes by neuritis; and he is strongly of opinion that many mild cases of tubercular meningitis occur, which not ending fatally, have hitherto been more or less overlooked or put down as a "trifling illness," but in which the same changes occur in the fundus of the eye, and he asks for a full and careful examination of the eyes in all cases when children have symptoms which, but for their mildness, would seem to indicate meningitis. In only one such case hitherto has Dr. Allbutt verified his diagnosis of past meningitis by a *post mortem* examination; in this case, a child had "obscure head symptoms, suggestive of meningitis," and "ischæmia papillæ" was discovered; he recovered, and the ischæmia partly subsided, but he had a relapse of the head symptoms, accompanied this time by neuritis, and ending fatally. Meningitis, *apparently of two distinct dates*, was found at the base, and the date of the first attack is supposed to have coincided with that of the first onset of head symptoms, and with the occurrence of the change seen in the discs.

Dr. Allbutt speculates as to the probable frequency with which idiocy follows non-fatal tubercular meningitis, and thinks it possible that a good many cases of acquired idiocy really follow this disease, and that this origin for such cases may be made certain, or at least highly probable, by ophthalmoscopic examination.

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